

ARTICLERESEARCH CHART INFO GRAPHIC OF Prepositions(حروف جر) (USAGE &EXAMPLES)

ARTICLE/RESEARCH: CHART / INFO GRAPHIC OF Prepositions(حروف
جر) (USAGE &EXAMPLES)

Prepositions – Time

English	Usage	Example
· on	§ days of the week	§ on Monday
· in	§ months / seasons § time of day § year § after a certain period of time (<i>when?</i>)	§ in August / in winter § in the morning § in 2006 § in an hour
· at	§ for <i>night</i> § for <i>weekend</i> § a certain point of time (<i>when?</i>)	§ at night § at the weekend § at half past nine
· since	§ from a certain point of time (past till now)	§ since 1980
· for	§ over a certain period of time (past till now)	§ for 2 years
· ago	§ a certain time in the past	§ 2 years ago
· before	§ earlier than a certain point of time	§ before 2004
· to	§ telling the time	§ ten to six (5:50)
· past	§ telling the time	§ ten past six (6:10)

English	Usage	Example
· to / till / until	§ marking the beginning and end of a period of time	§ from Monday to/till Friday
· till / until	§ in the sense of <i>how long something is going to last</i>	§ He is on holiday until Friday.
· by	§ in the sense of <i>at the latest</i> § up to a certain time	§ I will be back by 6 o'clock. § By 11 o'clock, I had read five pages.

Prepositions – Place (Position and Direction)

English	Usage	Example
· in	§ room, building, street, town, country § book, paper etc. § car, taxi § picture, world	§ in the kitchen, in London § in the book § in the car, in a taxi § in the picture, in the world
· at	§ meaning <i>next to, by an object</i> § for <i>table</i> § for events § place where you are to do something typical (watch a film, study, work)	§ at the door, at the station § at the table § at a concert, at the party § at the cinema, at school, at work
· on	§ attached § for a place with a river § being on a surface § for a certain side (left, right) § for a floor in a house § for public transport § for <i>television, radio</i>	§ the picture on the wall § London lies on the Thames. § on the table § on the left § on the first floor § on the bus, on a plane § on TV, on the radio
· by, next to, beside	§ left or right of somebody or something	§ Jane is standing by / next to / beside the car.

English	Usage	Example
· under	§ on the ground, lower than (or covered by) something else	§ the bag is under the table
· below	§ lower than something else but above ground	§ the fish are below the surface
· over	§ covered by something else § meaning <i>more than</i> § getting to the other side (also <i>across</i>) § overcoming an obstacle	§ put a jacket over your shirt § over 16 years of age § walk over the bridge § climb over the wall
· above	§ higher than something else, but not directly over it	§ a path above the lake
· across	§ getting to the other side (also <i>over</i>) § getting to the other side	§ walk across the bridge § swim across the lake
· through	§ something with limits on top, bottom and the sides	§ drive through the tunnel
· to	§ movement to person or building § movement to a place or country § for <i>bed</i>	§ go to the cinema § go to London / Ireland § go to bed
· into	§ enter a room / a building	§ go into the kitchen / the house
· towards	§ movement in the direction of something (but not directly to it)	§ go 5 steps towards the house
· onto	§ movement to the top of something	§ jump onto the table
· from	§ in the sense of <i>where from</i>	§ a flower from the garden

Other important Prepositions

English	Usage	Example
· from	§ who gave it	§ a present from Jane
· of	§ who/what does it belong to § what does it show	§ a page of the book § the picture of a palace

English	Usage	Example
· by	§ who made it	§ a book by Mark Twain
· on	§ walking or riding on horseback § entering a public transport vehicle	§ on foot, on horseback § get on the bus
· in	§ entering a car / Taxi	§ get in the car
· off	§ leaving a public transport vehicle	§ get off the train
· out of	§ leaving a car / Taxi	§ get out of the taxi
· by	§ rise or fall of something § travelling (other than walking or horse riding)	§ prices have risen by 10 percent § by car, by bus
· at	§ for <i>age</i>	§ she learned Russian at 45
· about	§ for topics, meaning <i>what about</i>	§ we were talking about you

ARTICLE/ RESEARCH ON SCIENCE: LIST OF MICROORGANISMS USED IN FOOD & BEVERAGE

LIST OF MICROORGANISMS USED IN FOOD & BEVERAGE

MICROORGANISM	TYPE OF MICROORGANISM	FOOD OR BEVERAGE
1. SACCHAROMYCES CEREVISIAE	fungus	ALE BEER
2. ASPERGILLUS NIGER	fungus	AWAMORI
3. BRACHYBACTERIUM ALIMENTARIUM	bacterium	BEAUFORT CHEESE

MICROORGANISM	TYPE OF MICROORGANISM	FOOD OR BEVERAGE
4. BRACHYBACTERIUM TYROFERMENTANS	bacterium	BEAUFORT CHEESE
5. ACETOBACTER CERVISIAE	bacterium	BEER
6. SACCHAROMYCES BAYANUS	fungus	BEER
7. LACTOBACILLUS BUCHERI	bacterium	BREAD
8. LACTOBACILLUS JENSENII	bacterium	BREAD
9. SACCHAROMYCES CERVISIAE	fungus	BREAD
10. LACTOBACILLUS SPP.	bacterium	BUTTER
11. LACTOCOCCUS SPP.	bacterium	BUTTER
12. LEUCONOSTOC MESAENTEROIDES SSP. DEXTRANICUM	bacterium	BUTTER
13. LEUCONOSTOC PSEUDOMESAENTEROIDES	bacterium	BUTTER
14. LEUCONOSTOC SPP.	bacterium	BUTTER
15. LACTOCOCCUS LACTIS	bacterium	BUTTERMILK
16. LEUCONOSTOC PSEUDOMESAENTEROIDES	bacterium	BUTTERMILK
17. LACTOBACILLUS CURVATUS	bacterium	CACIO DI FOSSA CHEESE
18. LACTOBACILLUS PARACASEI SSP. PARACASEI	bacterium	CACIO DI FOSSA CHEESE
19. LACTOBACILLUS PLANTARUM	bacterium	CACIO DI FOSSA CHEESE
20. LACTOBACILLUS BREVIS	bacterium	CANESTRATO PUGLIESE CHEESE
21. LACTOBACILLUS CURVATUS	bacterium	CANESTRATO PUGLIESE CHEESE
22. LACTOBACILLUS PARACASEI SSP. PARACASEI	bacterium	CANESTRATO PUGLIESE CHEESE
23. LACTOBACILLUS PENTOSUS	bacterium	CANESTRATO PUGLIESE CHEESE
24. LACTOBACILLUS PLANTARUM	bacterium	CANESTRATO PUGLIESE CHEESE
25. LACTOBACILLUS MANIHOTIVORANS	bacterium	CASSAVA
26. WEISSELLA BENINENSIS	bacterium	CASSAVA
27. LACTOCOCCUS LACTIS SSP. CREMORIS	bacterium	CHEDDAR CHEESE
28. BREVIBACTERIUM AURANTIACUM	bacterium	CHEESE
29. CANDIDA COLLICULOSA	fungus	CHEESE
30. CANDIDA UTILIS	fungus	CHEESE
31. CARNOBACTERIUM DIVERGENS	bacterium	CHEESE
32. CORYNEBACTERIUM AMMONIAGENES	bacterium	CHEESE
33. CORYNEBACTERIUM FLAVESCENS	bacterium	CHEESE
34. CORYNEBACTERIUM VARIABILE	bacterium	CHEESE
35. CYSTOFILOBASIDIUM INFIRMOMINIATUM	fungus	CHEESE

MICROORGANISM	TYPE OF MICROORGANISM	FOOD OR BEVERAGE
36. ENTEROCOCCUS FAECALIS	bacterium	CHEESE
37. FUSARIUM DOMESTICUM	fungus	CHEESE
38. GEOTRICHUM CANDIDUM	fungus	CHEESE
39. HAFNIA ALVEI	bacterium	CHEESE
40. KLUYVEROMYCES LACTIS	fungus	CHEESE
41. KLUYVEROMYCES MARXIANUS	fungus	CHEESE
42. KOCURIA RHIZOPHILA	bacterium	CHEESE
43. LACTOBACILLUS CORYNIFORMIS	bacterium	CHEESE
44. LACTOBACILLUS DELBRUECKII SSP. BULGARICUS	bacterium	CHEESE
45. LACTOBACILLUS HELVETICUS	bacterium	CHEESE
46. LACTOBACILLUS PARABREVIS	bacterium	CHEESE
47. LACTOBACILLUS PARAPLANTARUM	bacterium	CHEESE
48. LACTOBACILLUS PEROLENS	bacterium	CHEESE
49. LACTOCOCCUS LACTIS SSP. LACTIS	bacterium	CHEESE
50. LACTOCOCCUS RAFFINOLACTIS	bacterium	CHEESE
51. LECANICILLIUM LECANII	fungus	CHEESE
52. LEUCONOSTOC CITREUM	bacterium	CHEESE
53. LEUCONOSTOC LACTIS	bacterium	CHEESE
54. LEUCONOSTOC MESENTEROIDES SSP. CREMORIS	bacterium	CHEESE
55. MACROCOCCUS CASEOLYTICUS	bacterium	CHEESE
56. MICROCOCCUS LUTEUS	bacterium	CHEESE
57. MUCOR PLUMBEUS	fungus	CHEESE
58. MUCOR RACEMOSUS	fungus	CHEESE
59. PENICILLIUM CAMEMBERTI	fungus	CHEESE
60. PENICILLIUM CASEIFULVUM	fungus	CHEESE
61. PENICILLIUM CHRYSOGENUM	fungus	CHEESE
62. PENICILLIUM NALGIOVENSE	fungus	CHEESE
63. PENICILLIUM ROQUEFORTI	fungus	CHEESE
64. PROPIONIBACTERIUM ACIDIPROIONICI	bacterium	CHEESE
65. PROPIONIBACTERIUM JENSENII	bacterium	CHEESE
66. PROPIONIBACTERIUM THOENII	bacterium	CHEESE
67. PSYCHROBACTER CELER	bacterium	CHEESE
68. RHODOSPORIDIUM INFIRMOMINIATUM	fungus	CHEESE
69. SACCHAROMYCES CEREVISIAE	fungus	CHEESE
70. STAPHYLOCOCCUS CARNOSUS	bacterium	CHEESE
71. STAPHYLOCOCCUS EQUORUM SSP. LINENS	bacterium	CHEESE

MICROORGANISM	TYPE OF MICROORGANISM	FOOD OR BEVERAGE
72. <u>STAPHYLOCOCCUS FLEURETTII</u>	<u>bacterium</u>	<u>CHEESE</u>
73. <u>STAPHYLOCOCCUS SCIURI SSP. CARNATICUS</u>	<u>bacterium</u>	<u>CHEESE</u>
74. <u>STAPHYLOCOCCUS VITULINUS</u>	<u>bacterium</u>	<u>CHEESE</u>
75. <u>STAPHYLOCOCCUS XYLOSUS</u>	<u>bacterium</u>	<u>CHEESE</u>
76. <u>STREPTOCOCCUS THERMOPHILUS</u>	<u>bacterium</u>	<u>CHEESE</u>
77. <u>LACTOBACILLUS DIOLIVORANS</u>	<u>bacterium</u>	<u>CHICHA</u>
78. <u>ACETOBACTER ACETI</u>	<u>bacterium</u>	<u>CHOCOLATE</u>
79. <u>ACETOBACTER FABARUM</u>	<u>bacterium</u>	<u>CHOCOLATE</u>
80. <u>ACETOBACTER PASTEURIANUS</u>	<u>bacterium</u>	<u>CHOCOLATE</u>
81. <u>ACETOBACTER SYZYGII</u>	<u>bacterium</u>	<u>CHOCOLATE</u>
82. <u>ACETOBACTER TROPICALIS</u>	<u>bacterium</u>	<u>CHOCOLATE</u>
83. <u>ASPERGILLUS FUMIGATUS</u>	<u>fungus</u>	<u>CHOCOLATE</u>
84. <u>BACILLUS CEREUS</u>	<u>bacterium</u>	<u>CHOCOLATE</u>
85. <u>BACILLUS COAGULANS</u>	<u>bacterium</u>	<u>CHOCOLATE</u>
86. <u>BACILLUS LICHENIFORMIS</u>	<u>bacterium</u>	<u>CHOCOLATE</u>
87. <u>BACILLUS PUMILUS</u>	<u>bacterium</u>	<u>CHOCOLATE</u>
88. <u>BACILLUS STEAROTHERMOPHILUS</u>	<u>bacterium</u>	<u>CHOCOLATE</u>
89. <u>BACILLUS SUBTILIS</u>	<u>bacterium</u>	<u>CHOCOLATE</u>
90. <u>CANDIDA HUMICOLA</u>	<u>fungus</u>	<u>CHOCOLATE</u>
91. <u>CANDIDA PELLICULOSA</u>	<u>fungus</u>	<u>CHOCOLATE</u>
92. <u>CANDIDA RUGOSA</u>	<u>fungus</u>	<u>CHOCOLATE</u>
93. <u>CANDIDA TROPICALIS</u>	<u>fungus</u>	<u>CHOCOLATE</u>
94. <u>GLUCONACETOBACTER AZOTOCAPTANS</u>	<u>bacterium</u>	<u>CHOCOLATE</u>
95. <u>GLUCONACETOBACTER DIAZOTROPHICUS</u>	<u>bacterium</u>	<u>CHOCOLATE</u>
96. <u>GLUCONACETOBACTER JOHANNAE</u>	<u>bacterium</u>	<u>CHOCOLATE</u>
97. <u>GLUCONOBACTER OXYDANS</u>	<u>bacterium</u>	<u>CHOCOLATE</u>
98. <u>KLOECKERA AFRICANA</u>	<u>fungus</u>	<u>CHOCOLATE</u>
99. <u>KLOECKERA APIS</u>	<u>fungus</u>	<u>CHOCOLATE</u>
100. <u>KLOECKERA JAVANICA</u>	<u>fungus</u>	<u>CHOCOLATE</u>
101. <u>KLUYVEROMYCES MARXIANUS</u>	<u>fungus</u>	<u>CHOCOLATE</u>
102. <u>LACTOBACILLUS CACAONUM</u>	<u>bacterium</u>	<u>CHOCOLATE</u>
103. <u>LACTOBACILLUS CELLOBIOSUS</u>	<u>bacterium</u>	<u>CHOCOLATE</u>
104. <u>LACTOBACILLUS FABIFERMENTANS</u>	<u>bacterium</u>	<u>CHOCOLATE</u>

	MICROORGANISM	TYPE OF MICROORGANISM	FOOD OR BEVERAGE
105.	<u><i>LACTOBACILLUS FERMENTUM</i></u>	<u>bacterium</u>	<u>CHOCOLATE</u>
106.	<u><i>LACTOBACILLUS GHANENSIS</i></u>	<u>bacterium</u>	<u>CHOCOLATE</u>
107.	<u><i>LACTOBACILLUS HILGARDII</i></u>	<u>bacterium</u>	<u>CHOCOLATE</u>
108.	<u><i>LACTOBACILLUS PLANTARUM</i></u>	<u>bacterium</u>	<u>CHOCOLATE</u>
109.	<u><i>LACTOCOCCUS LACTIS</i></u>	<u>bacterium</u>	<u>CHOCOLATE</u>
110.	<u><i>LEUCONOSTOC MESENEROIDES</i></u>	<u>bacterium</u>	<u>CHOCOLATE</u>
111.	<u><i>MUCOR RACEMOSUS</i></u>	<u>fungus</u>	<u>CHOCOLATE</u>
112.	<u><i>RHODOTORULA GLUTINIS</i></u>	<u>fungus</u>	<u>CHOCOLATE</u>
113.	<u><i>RHODOTORULA RUBRA</i></u>	<u>fungus</u>	<u>CHOCOLATE</u>
114.	<u><i>SACCHAROMYCES CEREVISIAE</i></u>	<u>fungus</u>	<u>CHOCOLATE</u>
115.	<u><i>WEISSELLA FABARIA</i></u>	<u>bacterium</u>	<u>CHOCOLATE</u>
116.	<u><i>WEISSELLA GHANENSIS</i></u>	<u>bacterium</u>	<u>CHOCOLATE</u>
117.	<u><i>LACTOBACILLUS COLLINOIDES</i></u>	<u>bacterium</u>	<u>CIDER</u>
118.	<u><i>LACTOBACILLUS MALI</i></u>	<u>bacterium</u>	<u>CIDER</u>
119.	<u><i>LACTOBACILLUS YAMANASHIENSIS</i></u>	<u>bacterium</u>	<u>CIDER</u>
120.	<u><i>SACCHAROMYCES BAYANUS</i></u>	<u>fungus</u>	<u>CIDER</u>
121.	<u><i>SACCHAROMYCES CEREVISIAE</i></u>	<u>fungus</u>	<u>CIDER</u>
122.	<u><i>ACETOBACTER FABARUM</i></u>	<u>bacterium</u>	<u>COFFEE</u>
123.	<u><i>ACETOBACTER TROPICALIS</i></u>	<u>bacterium</u>	<u>COFFEE</u>
124.	<u><i>GLUCONACETOBACTER AZOTOCAPTANS</i></u>	<u>bacterium</u>	<u>COFFEE</u>
125.	<u><i>GLUCONACETOBACTER DIAZOTROPHICUS</i></u>	<u>bacterium</u>	<u>COFFEE</u>
126.	<u><i>GLUCONACETOBACTER JOHANNAE</i></u>	<u>bacterium</u>	<u>COFFEE</u>
127.	<u><i>LEUCONOSTOC HOLZAPFELII</i></u>	<u>bacterium</u>	<u>COFFEE</u>
128.	<u><i>ENTEROCOCCUS FAECALIS</i></u>	<u>bacterium</u>	<u>CREAM</u>
129.	<u><i>BIFIDOBACTERIUM ANIMALIS</i></u>	<u>bacterium</u>	<u>DAIRY</u>

	MICROORGANISM	TYPE OF MICROORGANISM	FOOD OR BEVERAGE
130.	<u><i>BIFIDOBACTERIUM BIFIDUM</i></u>	<u>bacterium</u>	<u>DAIRY</u>
131.	<u><i>BIFIDOBACTERIUM BREVE</i></u>	<u>bacterium</u>	<u>DAIRY</u>
132.	<u><i>BIFIDOBACTERIUM INFANTIS</i></u>	<u>bacterium</u>	<u>DAIRY</u>
133.	<u><i>BIFIDOBACTERIUM LACTIS</i></u>	<u>bacterium</u>	<u>DAIRY</u>
134.	<u><i>BIFIDOBACTERIUM LONGUM</i></u>	<u>bacterium</u>	<u>DAIRY</u>
135.	<u><i>BIFIDOBACTERIUM PSEUDOLONGUM</i></u>	<u>bacterium</u>	<u>DAIRY</u>
136.	<u><i>BIFIDOBACTERIUM THERMOPHILUM</i></u>	<u>bacterium</u>	<u>DAIRY</u>
137.	<u><i>CARNOBACTERIUM MALTAROMATICUM</i></u>	<u>bacterium</u>	<u>DAIRY</u>
138.	<u><i>KOCURIA VARIANS</i></u>	<u>bacterium</u>	<u>DAIRY</u>
139.	<u><i>LACTOBACILLUS ACIDIPISCIS</i></u>	<u>bacterium</u>	<u>DAIRY</u>
140.	<u><i>LACTOBACILLUS GASSERI</i></u>	<u>bacterium</u>	<u>DAIRY</u>
141.	<u><i>LACTOBACILLUS JOHNSONII</i></u>	<u>bacterium</u>	<u>DAIRY</u>
142.	<u><i>LACTOBACILLUS NODENSIS</i></u>	<u>bacterium</u>	<u>DAIRY</u>
143.	<u><i>LACTOBACILLUS PARACASEI</i></u>	<u>bacterium</u>	<u>DAIRY</u>
144.	<u><i>LACTOBACILLUS SALIVARIUS</i></u>	<u>bacterium</u>	<u>DAIRY</u>
145.	<u><i>LACTOBACILLUS TUCETI</i></u>	<u>bacterium</u>	<u>DAIRY</u>
146.	<u><i>PICHIA FERMENTANS</i></u>	<u>fungus</u>	<u>DAIRY</u>
147.	<u><i>PROPIONIBACTERIUM FREUDENREICHII</i> SSP. <i>FREUDENREICHII</i></u>	<u>bacterium</u>	<u>DAIRY</u>
148.	<u><i>STAPHYLOCOCCUS SUCCINUS</i></u>	<u>bacterium</u>	<u>DAIRY</u>
149.	<u><i>STREPTOCOCCUS GALLOLYTICUS</i></u>	<u>bacterium</u>	<u>DAIRY</u>
150.	<u><i>YARROWIA LIPOLYTICA</i></u>	<u>fungus</u>	<u>DAIRY</u>
151.	<u><i>PROPIONIBACTERIUM FREUDENREICHII</i> SSP. <i>SHERMANII</i></u>	<u>bacterium</u>	<u>EMMENTAL CHEESE</u>
152.	<u><i>PENICILLIUM ALBUM</i></u>	<u>fungus</u>	<u>FARMHOUSE CHEESES</u>

MICROORGANISM	TYPE OF MICROORGANISM	FOOD OR BEVERAGE
153. <u>CARNOBACTERIUM DIVERGENS</u>	<u>bacterium</u>	<u>FISH</u>
154. <u>LACTOBACILLUS ACIDIPISCIS</u>	<u>bacterium</u>	<u>FISH</u>
155. <u>LACTOBACILLUS ALIMENTARIUS</u>	<u>bacterium</u>	<u>FISH</u>
156. <u>LACTOBACILLUS FARCIMINIS</u>	<u>bacterium</u>	<u>FISH</u>
157. <u>LACTOBACILLUS PENTOSUS</u>	<u>bacterium</u>	<u>FISH</u>
158. <u>LEUCONOSTOC CITREUM</u>	<u>bacterium</u>	<u>FISH</u>
159. <u>STAPHYLOCOCCUS PISCIFERMENTANS</u>	<u>bacterium</u>	<u>FISH</u>
160. <u>WEISSELLA THAILANDENSIS</u>	<u>bacterium</u>	<u>FISH</u>
161. <u>LACTOBACILLUS ACETOTOLERANS</u>	<u>bacterium</u>	<u>FRUIT</u>
162. <u>LACTOBACILLUS PENTOSUS</u>	<u>bacterium</u>	<u>FRUIT</u>
163. <u>LACTOBACILLUS POBUZIHII</u>	<u>bacterium</u>	<u>FRUIT</u>
164. <u>LACTOBACILLUS SUEBICUS</u>	<u>bacterium</u>	<u>FRUIT</u>
165. <u>LACTOBACILLUS VACCINOSTERCUS</u>	<u>bacterium</u>	<u>FRUIT</u>
166. <u>LACTOBACILLUS CASEI SSP. PSEUDOPLANTARUM</u>	<u>bacterium</u>	<u>GRANA PADANO CHEESE</u>
167. <u>LACTOBACILLUS RHAMNOSUS</u>	<u>bacterium</u>	<u>GRANA PADANO CHEESE</u>
168. <u>BRACHYBACTERIUM ALIMENTARIUM</u>	<u>bacterium</u>	<u>GRUYÈRE CHEESE</u>
169. <u>BRACHYBACTERIUM TYROFERMENTANS</u>	<u>bacterium</u>	<u>GRUYÈRE CHEESE</u>
170. <u>ENTEROCOCCUS FAECALIS</u>	<u>bacterium</u>	<u>HAM</u>
171. <u>ENTEROCOCCUS FAECIUM</u>	<u>bacterium</u>	<u>HAM</u>
172. <u>PENICILLIUM NALGIOVENSE</u>	<u>fungus</u>	<u>HAM</u>
173. <u>STAPHYLOCOCCUS SAPHROPHYTICUS</u>	<u>bacterium</u>	<u>HARZER CHEESE</u>
174. <u>LACTOBACILLUS CASEI</u>	<u>bacterium</u>	<u>IDIAZABAL CHEESE</u>

MICROORGANISM	TYPE OF MICROORGANISM	FOOD OR BEVERAGE
175. <u>LACTOBACILLUS PLANTARUM</u>	<u>bacterium</u>	<u>IDIAZABAL CHEESE</u>
176. <u>LEUCONOSTOC MESENEROIDES SSP. DEXTRANICUM</u>	<u>bacterium</u>	<u>IDIAZABAL CHEESE</u>
177. <u>LEUCONOSTOC MESENEROIDES SSP. MESENEROIDES</u>	<u>bacterium</u>	<u>IDIAZABAL CHEESE</u>
178. <u>CANDIDA COLLICULOSA</u>	<u>fungus</u>	<u>KEFIR</u>
179. <u>ISSATCHENKIA ORIENTALIS</u>	<u>fungus</u>	<u>KEFIR</u>
180. <u>KAZACHSTANIA EXIGUA</u>	<u>fungus</u>	<u>KEFIR</u>
181. <u>KAZACHSTANIA UNISPORA</u>	<u>fungus</u>	<u>KEFIR</u>
182. <u>LACTOBACILLUS BREVIS SSP. LINENS</u>	<u>bacterium</u>	<u>KEFIR</u>
183. <u>LACTOBACILLUS KEFIRANOFACIENS</u>	<u>bacterium</u>	<u>KEFIR</u>
184. <u>LACTOBACILLUS KEFIRI</u>	<u>bacterium</u>	<u>KEFIR</u>
185. <u>LACTOBACILLUS PARABREVIS</u>	<u>bacterium</u>	<u>KEFIR</u>
186. <u>LACTOBACILLUS PARAKEFIRI</u>	<u>bacterium</u>	<u>KEFIR</u>
187. <u>PICHIA FERMENTANS</u>	<u>fungus</u>	<u>KEFIR</u>
188. <u>ZYGOTORULASPORA FLORENTINA</u>	<u>fungus</u>	<u>KEFIR</u>
189. <u>LACTOBACILLUS KIMCHII</u>	<u>bacterium</u>	<u>KIMCHI</u>
190. <u>LEUCONOSTOC INHAE</u>	<u>bacterium</u>	<u>KIMCHI</u>
191. <u>LEUCONOSTOC KIMCHII</u>	<u>bacterium</u>	<u>KIMCHI</u>
192. <u>TETRAGENOCOCCUS KOREENSIS</u>	<u>bacterium</u>	<u>KIMCHI</u>
193. <u>WEISSELLA CIBARIA</u>	<u>bacterium</u>	<u>KIMCHI</u>
194. <u>WEISSELLA KOREENSIS</u>	<u>bacterium</u>	<u>KIMCHI</u>
195. <u>SACCHAROMYCES CARLSBERGENSIS</u>	<u>fungus</u>	<u>LAGER BEER</u>
196. <u>SACCHAROMYCES PASTORIANUS</u>	<u>fungus</u>	<u>LAGER BEER</u>
197. <u>SACCHAROMYCES UVARUM</u>	<u>fungus</u>	<u>LAGER BEER</u>
198. <u>CANDIDA MYCODERMA^[10]</u>	<u>fungus</u>	<u>LIMBURGER CHEESE</u>
199. <u>DEBARYOMYCES KLOECKERI</u>	<u>fungus</u>	<u>LIMBURGER CHEESE</u>

MICROORGANISM	TYPE OF MICROORGANISM	FOOD OR BEVERAGE
200. <i>MICROBACTERIUM GUBBEENSENSE</i>	bacterium	LIMBURGER CHEESE
201. <i>ENTEROCOCCUS FAECIUM</i>	bacterium	MANCHEGO CHEESE
202. <i>LACTOBACILLUS CASEI</i>	bacterium	MANCHEGO CHEESE
203. <i>LACTOBACILLUS PLANTARUM</i>	bacterium	MANCHEGO CHEESE
204. <i>CARNOBACTERIUM DIVERGENS</i>	bacterium	MEAT
205. <i>CARNOBACTERIUM PISCICOLA</i>	bacterium	MEAT
206. <i>HALOMONAS ELONGATA</i>	bacterium	MEAT
207. <i>KOCURIA RHIZOPHILA</i>	bacterium	MEAT
208. <i>LACTOBACILLUS ALIMENTARIUS</i>	bacterium	MEAT
209. <i>LACTOBACILLUS DEXTRINICUS</i>	bacterium	MEAT
210. <i>LACTOBACILLUS PARACASEI</i>	bacterium	MEAT
211. <i>LACTOBACILLUS RHAMNOSUS</i>	bacterium	MEAT
212. <i>LEUCONOSTOC CARNOSUM</i>	bacterium	MEAT
213. <i>PENICILLIUM SOLITUM</i>	fungus	MEAT
214. <i>STAPHYLOCOCCUS EQUORUM</i>	bacterium	MEAT
215. <i>STAPHYLOCOCCUS SUCCINUS</i>	bacterium	MEAT
216. <i>STAPHYLOCOCCUS VITULINUS</i>	bacterium	MEAT
217. <i>STAPHYLOCOCCUS WARNERI</i>	bacterium	MEAT
218. <i>STREPTOMYCES GRISEUS</i>	bacterium	MEAT
219. <i>STREPTOMYCES MOBARAENSIS</i>	bacterium	MEAT, FISH
220. <i>ASPERGILLUS ORYZAE</i>	fungus	MISO
221. <i>ASPERGILLUS SOJAE</i>	fungus	MISO
222. <i>ENTEROCOCCUS FAECALIS</i>	bacterium	MISO
223. <i>ENTEROCOCCUS FAECIUM</i>	bacterium	MISO
224. <i>SACCHAROMYCES ROUZII</i>	fungus	MISO

MICROORGANISM	TYPE OF MICROORGANISM	FOOD OR BEVERAGE
225. <u>TETRAGENOCOCCUS HALOPHILUS</u>	<u>bacterium</u>	<u>MISO</u>
226. <u>TORULOPSIS VERSATILIS</u>	<u>fungus</u>	<u>MISO</u>
227. <u>BACILLUS SUBTILIS</u>	<u>bacterium</u>	<u>NATTO</u>
228. <u>LACTOBACILLUS SPP.</u>	<u>bacterium</u>	<u>OLIVE</u>
229. <u>LEUCONOSTOC SPP.</u>	<u>bacterium</u>	<u>OLIVE</u>
230. <u>NEUROSPORA INTERMEDIA</u>	<u>fungus</u>	<u>ONCOM</u>
231. <u>RHIZOPUS MICROSPORUS SSP. OLIGOSPORUS</u>	<u>fungus</u>	<u>ONCOM</u>
232. <u>LEUCONOSTOC PALMAE</u>	<u>bacterium</u>	<u>PALM WINE</u>
233. <u>ZYMONONAS MOBILIS</u>	<u>bacterium</u>	<u>PALM WINE</u>
234. <u>LACTOBACILLUS CASEI SSP. PSEUDOPLANTARUM</u>	<u>bacterium</u>	<u>PARMIGIANO-REGGIANO CHEESE</u>
235. <u>LACTOBACILLUS RHAMNOSUS</u>	<u>bacterium</u>	<u>PARMIGIANO-REGGIANO CHEESE</u>
236. <u>LACTOBACILLUS CURVATUS</u>	<u>bacterium</u>	<u>PECORINO ROMANO CHEESE</u>
237. <u>LACTOBACILLUS DELBRUECKII SSP. LACTIS</u>	<u>bacterium</u>	<u>PECORINO ROMANO CHEESE</u>
238. <u>LACTOBACILLUS FERMENTUM</u>	<u>bacterium</u>	<u>PECORINO ROMANO CHEESE</u>
239. <u>LACTOBACILLUS PLANTARUM</u>	<u>bacterium</u>	<u>PECORINO ROMANO CHEESE</u>
240. <u>LACTOBACILLUS CURVATUS</u>	<u>bacterium</u>	<u>PECORINO SARDO CHEESE</u>
241. <u>LACTOBACILLUS PARACASEI SSP. PARACASEI</u>	<u>bacterium</u>	<u>PECORINO SARDO CHEESE</u>
242. <u>ENTEROCOCCUS FAECALIS</u>	<u>bacterium</u>	<u>PICKLE</u>
243. <u>ENTEROCOCCUS FAECIUM</u>	<u>bacterium</u>	<u>PICKLE</u>
244. <u>LACTOBACILLUS KISONENSIS</u>	<u>bacterium</u>	<u>PICKLE</u>
245. <u>LACTOBACILLUS OTAKIENSIS</u>	<u>bacterium</u>	<u>PICKLE</u>
246. <u>LACTOBACILLUS RAPI</u>	<u>bacterium</u>	<u>PICKLE</u>
247. <u>LACTOBACILLUS SUNKII</u>	<u>bacterium</u>	<u>PICKLE</u>
248. <u>LEUCONOSTOC MESENTEROIDES SSP. DEXTRANICUM</u>	<u>bacterium</u>	<u>PICKLE</u>
249. <u>LACTOBACILLUS SENMAIZUKEI</u>	<u>bacterium</u>	<u>PICKLES</u>

MICROORGANISM	TYPE OF MICROORGANISM	FOOD OR BEVERAGE
250. <i>ZYMOMONAS MOBILIS</i>	bacterium	PULQUE
251. <i>YARROWIA LIPOLYTICA</i>	fungus	RACLETTE CHEESE
252. <i>CANDIDA ZEYLANOIDES</i>	fungus	REBLOCHON CHEESE
253. <i>DEBARYOMYCES HANSENI</i>	fungus	REBLOCHON CHEESE
254. <i>CANDIDA VINI</i> ^[10]	fungus	REBLOCHON CHEESE, WINE
255. <i>LACTOBACILLUS CASEI</i>	bacterium	RONCAL CHEESE
256. <i>LACTOBACILLUS PLANTARUM</i>	bacterium	RONCAL CHEESE
257. <i>LEUCONOSTOC MESENEROIDES</i> SSP. <i>DEXTRANICUM</i>	bacterium	RONCAL CHEESE
258. <i>LEUCONOSTOC MESENEROIDES</i> SSP. <i>MESENEROIDES</i>	bacterium	RONCAL CHEESE
259. <i>LACTOBACILLUS MALI</i>	bacterium	RUM
260. <i>LACTOBACILLUS SIMILIS</i>	bacterium	RUM
261. <i>ASPERGILLUS ORYZAE</i>	fungus	SAKE
262. <i>LACTOBACILLUS HOMOHIUCHII</i>	bacterium	SAKE
263. <i>LACTOBACILLUS SAKEI</i>	bacterium	SAKE
264. <i>LEUCONOSTOC FALLAX</i>	bacterium	SAUERKRAUT
265. <i>ENTEROCOCCUS FAECALIS</i>	bacterium	SAUSAGE
266. <i>KOCURIA VARIANS</i>	bacterium	SAUSAGE
267. <i>LACTOBACILLUS CURVATUS</i>	bacterium	SAUSAGE
268. <i>LACTOBACILLUS PLANTARUM</i>	bacterium	SAUSAGE
269. <i>LACTOBACILLUS SAKEI</i>	bacterium	SAUSAGE
270. <i>LACTOBACILLUS TUCETI</i>	bacterium	SAUSAGE
271. <i>LACTOBACILLUS VERSMOLDESIS</i>	bacterium	SAUSAGE
272. <i>MACROCOCCUS CASEOLYTICUS</i>	bacterium	SAUSAGE
273. <i>MICROCOCCUS LYLAE</i>	bacterium	SAUSAGE
274. <i>PEDIOCOCCUS ACIDILACTICI</i>	bacterium	SAUSAGE
275. <i>PEDIOCOCCUS PENTOSACEUS</i>	bacterium	SAUSAGE
276. <i>PENICILLIUM CHRYSOGENUM</i>	fungus	SAUSAGE

MICROORGANISM	TYPE OF MICROORGANISM	FOOD OR BEVERAGE
277. <u>PENICILLIUM NALGIOVENSE</u>	<u>fungus</u>	<u>SAUSAGE</u>
278. <u>STAPHYLOCOCCUS CARNOSUS SSP. CARNOSUS</u>	<u>bacterium</u>	<u>SAUSAGE</u>
279. <u>STAPHYLOCOCCUS SIMULANS</u>	<u>bacterium</u>	<u>SAUSAGE</u>
280. <u>STAPHYLOCOCCUS XYLOSUS</u>	<u>bacterium</u>	<u>SAUSAGE</u>
281. <u>WEISSELLA PARAMESENTEROIDES</u>	<u>bacterium</u>	<u>SAUSAGE</u>
282. <u>LACTOBACILLUS COMPOSTI</u>	<u>bacterium</u>	<u>SHŌCHŪ</u>
283. <u>LACTOBACILLUS SATSUMENSIS</u>	<u>bacterium</u>	<u>SHŌCHŪ</u>
284. <u>ARTHROBACTER ARILAITENSIS</u>	<u>bacterium</u>	SMEAR-RIPENED <u>CHEESE</u>
285. <u>ARTHROBACTER BERGEREI</u>	<u>bacterium</u>	SMEAR-RIPENED <u>CHEESE</u>
286. <u>ARTHROBACTER GLOBIFORMIS</u>	<u>bacterium</u>	SMEAR-RIPENED <u>CHEESE</u>
287. <u>ARTHROBACTER VARIABILIS</u>	<u>bacterium</u>	SMEAR-RIPENED <u>CHEESE</u>
288. <u>BREVIBACTERIUM CASEI</u>	<u>bacterium</u>	SMEAR-RIPENED <u>CHEESE</u>
289. <u>BREVIBACTERIUM LINENS</u>	<u>bacterium</u>	SMEAR-RIPENED <u>CHEESE</u>
290. <u>CORYNEBACTERIUM CASEI</u>	<u>bacterium</u>	SMEAR-RIPENED <u>CHEESE</u>
291. <u>CORYNEBACTERIUM MOOREPARKENSE</u>	<u>bacterium</u>	SMEAR-RIPENED <u>CHEESE</u>
292. <u>DEBARYOMYCES HANSENII</u>	<u>fungus</u>	SMEAR-RIPENED <u>CHEESE</u>
293. <u>MICROBACTERIUM GUBBEENSENSE</u>	<u>bacterium</u>	SMEAR-RIPENED <u>CHEESE</u>
294. <u>RHODOTORULA MINUTA</u>	<u>fungus</u>	SMEAR-RIPENED <u>CHEESE</u>
295. <u>TORULASPORA DELBRUECKII</u>	<u>fungus</u>	SMEAR-RIPENED <u>CHEESE</u>
296. <u>THRICHOSPORON BEIGELII</u>	<u>fungus</u>	SMEAR-RIPENED <u>CHEESE</u>
297. <u>YARROWIA LIPOLYTICA</u>	<u>fungus</u>	SMEAR-RIPENED <u>CHEESE</u>
298. <u>LEUCONOSTOC PSEUDOMESENTEROIDES</u>	<u>bacterium</u>	<u>SOUR CREAM</u>
299. <u>CANDIDA VALIDA</u> ^[101]	<u>fungus</u>	<u>SOURDOUGH</u>
300. <u>CANDIDA EXIGUUS</u>	<u>fungus</u>	<u>SOURDOUGH BREAD</u>

MICROORGANISM	TYPE OF MICROORGANISM	FOOD OR BEVERAGE
301. <i>CANDIDA MILLERI</i>	fungus	SOURDOUGH BREAD
302. <i>LACTOBACILLUS ACETOTOLERANS</i>	bacterium	SOURDOUGH BREAD
303. <i>LACTOBACILLUS ACIDIFARINAE</i>	bacterium	SOURDOUGH BREAD
304. <i>LACTOBACILLUS CRISPATUS</i>	bacterium	SOURDOUGH BREAD
305. <i>LACTOBACILLUS FERMENTUM</i>	bacterium	SOURDOUGH BREAD
306. <i>LACTOBACILLUS GASSERI</i>	bacterium	SOURDOUGH BREAD
307. <i>LACTOBACILLUS HAMMESII</i>	bacterium	SOURDOUGH BREAD
308. <i>LACTOBACILLUS HOMOHIIOCHII</i>	bacterium	SOURDOUGH BREAD
309. <i>LACTOBACILLUS JOHNSONII</i>	bacterium	SOURDOUGH BREAD
310. <i>LACTOBACILLUS MINDENSIS</i>	bacterium	SOURDOUGH BREAD
311. <i>LACTOBACILLUS MUCOSAE</i>	bacterium	SOURDOUGH BREAD
312. <i>LACTOBACILLUS NAMURESIS</i>	bacterium	SOURDOUGH BREAD
313. <i>LACTOBACILLUS NANTESIS</i>	bacterium	SOURDOUGH BREAD
314. <i>LACTOBACILLUS PANIS</i>	bacterium	SOURDOUGH BREAD
315. <i>LACTOBACILLUS PARABUCHNERI</i>	bacterium	SOURDOUGH BREAD
316. <i>LACTOBACILLUS PARALIMENTARIUS</i>	bacterium	SOURDOUGH BREAD
317. <i>LACTOBACILLUS PONTIS</i>	bacterium	SOURDOUGH BREAD
318. <i>LACTOBACILLUS REUTERI</i>	bacterium	SOURDOUGH BREAD
319. <i>LACTOBACILLUS ROSSIAE</i>	bacterium	SOURDOUGH BREAD
320. <i>LACTOBACILLUS SANFRANCISCENSIS</i>	bacterium	SOURDOUGH BREAD
321. <i>LACTOBACILLUS SECALIPHILUS</i>	bacterium	SOURDOUGH BREAD
322. <i>LACTOBACILLUS SILIGINIS</i>	bacterium	SOURDOUGH BREAD
323. <i>LACTOBACILLUS SPICHERI</i>	bacterium	SOURDOUGH BREAD
324. <i>BIFIDOBACTERIUM BREVE</i>	bacterium	SOY

MICROORGANISM	TYPE OF MICROORGANISM	FOOD OR BEVERAGE
325. <u>LACTOBACILLUS FARCIMINIS</u>	<u>bacterium</u>	<u>SOY</u>
326. <u>STAPHYLOCOCCUS CONDIMENTI</u>	<u>bacterium</u>	<u>SOY</u>
327. <u>MUCOR HIEMALIS</u>	<u>fungus</u>	<u>SOY BEAN</u> CURD
328. <u>ASPERGILLUS ORYZAE</u>	<u>fungus</u>	<u>SOY SAUCE</u>
329. <u>ASPERGILLUS SOJAE</u>	<u>fungus</u>	<u>SOY SAUCE</u>
330. <u>ENTEROCOCCUS FAECALIS</u>	<u>bacterium</u>	<u>SOY SAUCE</u>
331. <u>ENTEROCOCCUS FAECIUM</u>	<u>bacterium</u>	<u>SOY SAUCE</u>
332. <u>TETRAGENOCOCCUS HALOPHILUS</u>	<u>bacterium</u>	<u>SOY SAUCE</u>
333. <u>BACILLUS SPHAERICUS</u>	<u>bacterium</u>	<u>STINKY TOFU</u>
334. <u>ARTHROBACTER NICOTIANAE</u>	<u>bacterium</u>	SURFACE-RIPENED <u>CHEESE</u>
335. <u>CANDIDA KEFYR</u>	<u>fungus</u>	SURFACE-RIPENED <u>CHEESE</u>
336. <u>CANDIDA KRUSEI</u>	<u>fungus</u>	SURFACE-RIPENED <u>CHEESE</u>
337. <u>MICROBACTERIUM FOLIORUM</u>	<u>bacterium</u>	SURFACE-RIPENED <u>CHEESE</u>
338. <u>PENICILLIUM COMMUNE</u>	<u>fungus</u>	SURFACE-RIPENED <u>CHEESE</u>
339. <u>PROTEUS VULGARIS</u>	<u>bacterium</u>	SURFACE-RIPENED <u>CHEESE</u>
340. <u>ASPERGILLUS ACIDUS</u>	<u>fungus</u>	<u>TEA</u>
341. <u>RHIZOPUS MICROSPORUS SSP. OLIGOSPORUS</u>	<u>fungus</u>	<u>TEMPEH</u>
342. <u>ARTHROBACTER NICOTIANAE</u>	<u>bacterium</u>	<u>TILSIT CHEESE</u>
343. <u>MICROBACTERIUM GUBBEENSENSE</u>	<u>bacterium</u>	<u>TILSIT CHEESE</u>
344. <u>VERTICILLIUM LECANII</u>	<u>fungus</u>	<u>TOMME CHEESE</u>
345. <u>ACETOBACTER LOVANIENSIS</u>	<u>bacterium</u>	<u>VEGETABLES</u>
346. <u>ACETOBACTER ORIENTALIS</u>	<u>bacterium</u>	<u>VEGETABLES</u>
347. <u>LACTOBACILLUS ACETOTOLERANS</u>	<u>bacterium</u>	<u>VEGETABLES</u>
348. <u>LACTOBACILLUS ACIDOPHILUS</u>	<u>bacterium</u>	<u>VEGETABLES</u>
349. <u>LACTOBACILLUS BREVIS</u>	<u>bacterium</u>	<u>VEGETABLES</u>
350. <u>LACTOBACILLUS DELBRUECKII</u>	<u>bacterium</u>	<u>VEGETABLES</u>

MICROORGANISM	TYPE OF MICROORGANISM	FOOD OR BEVERAGE
351. <u>LACTOBACILLUS</u> <u>HARBINENSIS</u>	<u>bacterium</u>	<u>VEGETABLES</u>
352. <u>LACTOBACILLUS</u> <u>HELVETICUS</u>	<u>bacterium</u>	<u>VEGETABLES</u>
353. <u>LACTOBACILLUS</u> <u>PARABREVIS</u>	<u>bacterium</u>	<u>VEGETABLES</u>
354. <u>LACTOBACILLUS</u> <u>PARAPLANTARUM</u>	<u>bacterium</u>	<u>VEGETABLES</u>
355. <u>LACTOBACILLUS</u> <u>PEROLENS</u>	<u>bacterium</u>	<u>VEGETABLES</u>
356. <u>LACTOBACILLUS</u> <u>PLANTARUM</u>	<u>bacterium</u>	<u>VEGETABLES</u>
357. <u>LACTOBACILLUS RAPI</u>	<u>bacterium</u>	<u>VEGETABLES</u>
358. <u>LACTOBACILLUS</u> <u>RHAMNOSUS</u>	<u>bacterium</u>	<u>VEGETABLES</u>
359. <u>LACTOBACILLUS</u> <u>VACCINOSTERCUS</u>	<u>bacterium</u>	<u>VEGETABLES</u>
360. <u>LEUCONOSTOC</u> <u>MESENTEROIDES</u>	<u>bacterium</u>	<u>VEGETABLES</u>
361. <u>LEUCONOSTOC</u> <u>MESENTEROIDES SSP. CREMORIS</u>	<u>bacterium</u>	<u>VEGETABLES</u>
362. <u>PEDIOCOCCUS</u> <u>ACIDILACTICI</u>	<u>bacterium</u>	<u>VEGETABLES</u>
363. <u>ACETOBACTER ACETI</u>	<u>bacterium</u>	<u>VINEGAR</u>
364. <u>ACETOBACTER MALORUM</u>	<u>bacterium</u>	<u>VINEGAR</u>
365. <u>ACETOBACTER</u> <u>PASTEURIANUS</u>	<u>bacterium</u>	<u>VINEGAR</u>
366. <u>ACETOBACTER POMORUM</u>	<u>bacterium</u>	<u>VINEGAR</u>
367. <u>ACETOBACTER SYZYGII</u>	<u>bacterium</u>	<u>VINEGAR</u>
368. <u>GLUCONACETOBACTER</u> <u>ENTANII</u>	<u>bacterium</u>	<u>VINEGAR</u>
369. <u>GLUCONACETOBACTER</u> <u>EUROPAEUS</u>	<u>bacterium</u>	<u>VINEGAR</u>
370. <u>GLUCONACETOBACTER</u> <u>HANSENI</u>	<u>bacterium</u>	<u>VINEGAR</u>
371. <u>GLUCONACETOBACTER</u> <u>OBOEDIENS</u>	<u>bacterium</u>	<u>VINEGAR</u>
372. <u>GLUCONACETOBACTER</u> <u>XYLINUS</u>	<u>bacterium</u>	<u>VINEGAR</u>
373. <u>CYBERLINDNERA MRAKII</u>	<u>fungus</u>	<u>WINE</u>

MICROORGANISM	TYPE OF MICROORGANISM	FOOD OR BEVERAGE
374. <u>LACTOBACILLUS BUCHERI</u>	<u>bacterium</u>	<u>WINE</u>
375. <u>LACTOBACILLUS HILGARDII</u>	<u>bacterium</u>	<u>WINE</u>
376. <u>LACTOBACILLUS KUNKEEI</u>	<u>bacterium</u>	<u>WINE</u>
377. <u>LACTOBACILLUS MALI</u>	<u>bacterium</u>	<u>WINE</u>
378. <u>LACTOBACILLUS NAGELII</u>	<u>bacterium</u>	<u>WINE</u>
379. <u>LACTOBACILLUS OENI</u>	<u>bacterium</u>	<u>WINE</u>
380. <u>LACTOBACILLUS PENTOSUS</u>	<u>bacterium</u>	<u>WINE</u>
381. <u>LACTOBACILLUS YAMANASHIENSIS</u>	<u>bacterium</u>	<u>WINE</u>
382. <u>LEUCONOSTOC SPP.</u>	<u>bacterium</u>	<u>WINE</u>
383. <u>OENOCOCCUS OENI</u>	<u>bacterium</u>	<u>WINE</u>
384. <u>PICHIA FERMENTANS</u>	<u>fungus</u>	<u>WINE</u>
385. <u>SACCHAROMYCES BAYANUS</u>	<u>fungus</u>	<u>WINE</u>
386. <u>SACCHAROMYCES CEREVISIAE</u>	<u>fungus</u>	<u>WINE</u>
387. <u>BIFIDOBACTERIUM ADOLESCENTIS</u>	<u>bacterium</u>	<u>YOGURT</u>
388. <u>LACTOBACILLUS ACIDOPHILUS</u>	<u>bacterium</u>	<u>YOGURT</u>
389. <u>LACTOBACILLUS CASEI</u>	<u>bacterium</u>	<u>YOGURT</u>
390. <u>LACTOBACILLUS DELBRUECKII SSP. BULGARICUS</u>	<u>bacterium</u>	<u>YOGURT</u>
391. <u>PSEUDOMONAS FLUORESCENS</u>	<u>bacterium</u>	<u>YOGURT</u>
392. <u>STREPTOCOCCUS SALIVARIUS</u>	<u>bacterium</u>	<u>YOGURT</u>
393. <u>STREPTOCOCCUS THERMOPHILUS</u>	<u>bacterium</u>	<u>YOGURT</u>

Evaluation of Hand Hygiene Perceptions & practice amongst health care workers in Saudi Arabian hospitals

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ABSTRACT

HAND HYGIENE is associated with increase morbidity, mortality, prolonged hospital stay, increased health care costs, and antibiotic resistance in both acute and long term care facilities. Hand hygiene, such as hand washing and hand rub, has been the cornerstone of infection prevention and control measures in reducing HAND HYGIENE. The aim of the study is to assess the perception towards hand hygiene amongst healthcare professionals such as doctors and nurses in the Ministry of Interior Security hospital, Saudi Arabia.

A descriptive survey using a modified World Health Organization (revised 2009) questionnaire was used to gather data. A total of 87 respondents participated in the study. Results showed that respondents (27.6%) are aware that HAND HYGIENE has an impact on patient outcome ($X^2= 46.5$; $p < 0.05$), hospitalized patient will likely develop HAND HYGIENE ($X^2= 50.4$; $p < 0.05$), and hand hygiene remains to be the single and most effective method against HAND HYGIENE ($X^2= 52.2$; $p < 0.05$). Respondents reported a high self-efficacy ($X^2= 127.3$; p

< 0.05) in performing hand hygiene.

Organizational factors such as staff engagement, commitment of the department heads and leadership are perceived to be significant in promoting hand hygiene practices. Strategies such as provision of access to hand hygiene facilities, guidelines, education and training, positive role modeling are effective. In conclusion, the findings suggest that health care workers have a high level of awareness about HAND HYGIENE and the importance of hand hygiene.

Furthermore, assessment of knowledge thru self-report is not enough to determine compliance of hand hygiene practices. Observational studies are recommended.

KEYWORDS:

HAND HYGIENE, Hand Hygiene, Nurses, Survey, Questionnaire.

INTRODUCTION

World Health Organization (2009) defines "HAND HYGIENE Associated Infections (HAND HYGIENE), also referred to as "nosocomial" or "hospital" infection, as an infection occurring in a patient during the process of care in a hospital or other healthcare facility which was not present or incubating at the time of admission." HAND HYGIENE is associated with increase morbidity, mortality, prolonged hospital stay, increased health care costs, and antibiotic resistance in both acute and long term care facilities (Shah, and Singhal, 2013).

Hand hygiene, such as hand washing and hand rub, has been the cornerstone of infection prevention and control measures in reducing HAND HYGIENE (Center for Disease Control, 2010). Despite the numerous guidelines published, compliance remain to be a challenge to achieve and sustain. Studies of Halwani, Tashkani, and Basuny (2010) in ten Intensive Care Units in Saudi Arabia about the incidence of HCAI's detected 851 HAND

HYGIENE among 5,523 patients admitted and stayed for 53,025 days with a mean length of stay of 9 days.

The incidence rate for HCAI was 16 per 1000 patients' days. Al-Tawfiq, Abed, Al-Yami, and Birrer (2012) conducted a descriptive time series study using multimodal International Journal of Caring Sciences January-April 2015 Volume 8 Issue 1 Page 109 www.internationaljournalofcaringsciences.org interventions from October 2006 to December 2011 set in a 350-bed community hospital in Saudi Arabia. The rate of health care-associated methicillin-resistant *Staphylococcus aureus* per 1,000 patient-days decreased from 0.42 in 2006 to 0.08 in 2011.

Ventilator-associated infection rates decreased from 6.12 to 0.78, central line-associated bloodstream infections rates decreased from 8.23 to 4.8, and catheter-associated urinary tract infection rates decreased from 7.08 to 3.5. Allegranzi et al. (2013) conducted a global implementation of WHO's multimodal strategy for improvement of hand hygiene using a quasi experimental study in five countries including Saudi Arabia. These prior studies show that implementation of WHO's hand-hygiene strategy is feasible and sustainable across a range of settings in different countries and leads to significant compliance and knowledge improvement in healthcare workers, supporting recommendation for use worldwide.

Whereas these WHO multi-modal strategy and previous studies indicate that this is effective in reducing HAIs and increasing hand hygiene compliance. The researchers as part of the Infection Control and Prevention Committee in the hospital would like to support the WHO hand hygiene campaign by conducting the study using the WHO approved tool kit.

The WHO tool kit offer a series of assessment and intervention framework to identify problems and strategies to improve hand hygiene practices in the hospital. Our study is in the initial phase of establishing the baseline data for the knowledge of

healthcare workers about hand hygiene.

SIGNIFICANCE OF STUDY

Hand hygiene is described by many health care workers as the single most important tool in preventing the spread of health care-associated infections between patients.

According to WHO, there are few definitive data on the patient-care activities that are most likely to transmit bacteria to worker hands, but there have been several studies that identified many possibilities. Although bacteria have been found on HEALTH CARE WORKER hands after activities such as wound care, intravascular catheter care, respiratory tract care and handling patient secretions as expected, bacteria also have been found on HEALTH CARE WORKER hands after so-called "clean" contact, such as taking a patient's pulse, temperature or blood pressure.

Organisms found on HEALTH CARE WORKER hands after such patient contact range from *Klebsiella* spp., *Staphylococcus aureus*, *Clostridium difficile*, MRSA and gram-negative bacteria. However, direct patient contact is not the only way HEALTH CARE WORKER hands can be contaminated. HEALTH CARE WORKERS can acquire bacteria on their hands by touching contaminated surfaces in the patient environment and simply by touching a contaminated chart at the nurses' station, according to the literature.

Washing hands before and after patient contact seems like a simple solution to prevent the spread of bacteria between patients. Most hospitals have hand hygiene policies in place that guide their employees to do just that. But it is not as simple as it seems.

"When we look at all of the things that we can do to prevent infections in the hospital, one of the most important things about hand hygiene is that it works for so many different types of organisms, and you get a lot of bang for the

buck," **Michael Edmond, MD, MPH**, the Richard P. Wenzel professor of internal medicine in the division of infectious diseases at Virginia Commonwealth University, told *Infectious Disease News*. "The issue is that you have to practice it at a high level of compliance for it to work. There are so many opportunities for hand hygiene, and it is difficult to get to a level of compliance where we're able to make changes to infection rates."

THE AIM OF THE STUDY

The purpose of this study is to support the WHO hand hygiene campaign against HAND HYGIENE. It aims to assess the perception towards hand hygiene amongst healthcare professionals in the hospital. Specifically, it seeks to identify perceptions on health care-associated infections and hand hygiene.

RESEARCH HYPOTHESIS SETTING

A descriptive study using a standardized survey questionnaire of the World Health Organization (WHO) was performed. Descriptive survey design aims to observe, describe, analyze and document aspects of situation as it naturally occurs (Polit & Beck, 2004).

In this situation, the perceptions about healthcare associated infection and hand hygiene were the focus of the study. The study was conducted at the Ministry of Interior Security Hospitals, Jeddah Kingdom of Saudi Arabia and was completed last July 2013.

PARTICIPANTS AND SAMPLING

A purposive sampling was done to meet the inclusion and exclusion criteria. The participants consisted of various healthcare professional working in the hospital.

The participants included in the study were healthcare

professional i.e. medical doctors, nurses and others who have a direct contact to patients at least on a daily basis, understands English and willing to participate in the survey.

Participants who did not meet the inclusion criteria were excluded. There were a total of 102 healthcare professionals eligible and was invited to participate in the study. However, there were only 87 participants who completed and returned the survey questionnaire.

TOOLS FOR DATA COLLECTION AND ANALYSIS

The study utilized the “Perception Survey for Health-Care Workers” questionnaire which was formulated and recommended by the World Health Organization (WHO) in their campaign for patient safety. It is a self-administered 21-item questionnaire used to measure perception with regards to healthcare associated infection and hand hygiene. This questionnaire has been reliable and validated by World Health Organization (WHO). It is easy to administer and takes about 10 minutes to fill-out.

The questionnaire was slightly modified by the researchers to remove irrelevant items and to ensure that items reflect the context where the research is conducted. Moreover, some terms were simplified to make it clear.

RESEARCH QUESTIONS

The first eight question asked about demographic characteristics. There were three items that pertains to perceptions about healthcare associated infection and ten items related to perceptions about hand hygiene practices. Possible answers to question were varied ranging from a yes or no response, one to seven rating and using a four point Likert scale. Information package, consent and the 21-item of questionnaire were altogether distributed to the identified eligible participants. SPSS statistical software version 17 was used for statistical analysis of the collected data.

STATISTICAL DESIGN

Descriptive statistics and inferential non-parametric Chi-squared (X^2) test was used. For statistical tests, P-values less than 0.05 were considered to be statistically significant.

ETHICAL CONSIDERATIONS

Ethical considerations were addressed by seeking the ethical approval from the Infection Control and Prevention Committee of the hospital. Research permit was sought from the hospital director. Participation in the study is completely voluntary. Information package and informed consent was provided.

Results There were a total of 87 healthcare professionals who participated. Nurses (64.4%) accounts for the majority of the participants, followed by physician (20.7%) and other healthcare professional (14.9%) such as psychologist, technicians, therapists and dietician. Males (94.3%) were the predominant respondent in the study as compared with the female (5.7%) participants. The mean age was 32.3 ± 8.3 years.

PILOT STUDY

Infection Participants were asked to identify the percentage of the hospitalized patients who will develop HAND HYGIENE. The responses obtained were varied and widely distributed from 0-100%. However, 27.6% of the respondents believed that there is about 0 – 10% chances that hospitalized patients will develop HAND HYGIENE.

On the other hand, there were 19.5% respondents who claimed that they don't have the knowledge of the occurrence of healthcare associated infection in the hospital. The difference among the respondent's perceptions about the percentage of hospitalized patients developing HAND HYGIENE was significant ($X^2= 50.4$; $p < 0.05$).

On the other hand, there was a significant difference in the perception of impact of health care-associated infection on a patient's clinical outcome ($X^2= 46.5$; $p < 0.05$). Most of the participants believed that there is a high (54%) and very high (21.8%) impact of HAND HYGIENE in patient's clinical outcome.

Lastly, Table 1 shows that there was a significant difference ($X^2= 52.2$; $p < 0.05$) in the respondents perceptions about the effectiveness of hand hygiene as measures to prevent HAND HYGIENE. Majority (99%) of the respondents knew and agreed that hand hygiene is the single and most effective against HAND HYGIENE. Perceptions about Hand Hygiene Three quarters of the participants had undertaken a formal training in hand hygiene in the last two years. When asked about the routine use of alcohol based hand rub when performing hand hygiene, 97.7% of the respondents agreed to prefer the hand rub method.

Among all patient safety issues, there was a significant difference ($X^2= 42.3$; $p < 0.05$) about the respondents perception as to the importance of hand hygiene at the institution. Respondents believed that hand hygiene has a high (43.7%) and very high (55.2%) priority in their affiliated hospital. When asked about the percentage of situations requiring hand hygiene and the actual performance of hand hygiene either by hand rubbing or hand washing among healthcare workers in the hospital, the response varied between 0 to 100%.

Around 67.7 % of the respondents believed that the actual performance of hand hygiene is between 70-100% which was significant ($X^2= 78.2$; $p < 0.05$).

Managers' support and promotion of hand hygiene (34.5%), alcohol based hand rub availability at each point of care (60.9%), displays of hand hygiene posters (57.5%), education on hand hygiene (40.2%), visible clear and simple instructions for hand hygiene (52.9%), positive role modeling (51.8%) and

patient reminding healthcare workers to perform hand hygiene (26.4%) were found significant interventions to promote and improve hand hygiene practices in the hospital as shown in Table 2.

TABLE 1. IMPACT OF HAND HYGIENE ON PATIENT'S CLINICAL OUTCOME AND EFFECTIVENESS OF HAND HYGIENE AS PREVENTIVE MEASURES.

RESPONDENT'S OPINION	VERY LOW	LOW	HIGH	VERY HIGH	χ^2 (p-value)
Impact of HCAI on patient's clinical outcome	3 2.4%	18 20.7%	47 54%	19 21.7%	46 (0.000)
Effectiveness of Hand Hygiene in preventing HAND HYGIENE	1 (1.1%)	0 (0%)	30 (34.5%)	56 (64.7)	53.2 (0.000)

<<*>>HH means HAND HYGIENE

TABLE 2. EFFECTIVENESS OF VARIOUS STRATEGIES TO IMPROVE HAND HYGIENE PRACTICES.

ACTIONS	1 Not Effective	2	3	4	5	6	7 Very Effective	χ^2 (p-value)
Managers support and promote HH	0 (0.0%)	0 (0.0%)	3 (3.4%)	14 (16.1%)	17 (19.5%)	23 (26.2%)	30 (33.0%)	23.5 (0.000%)
Handrub always available	0 (0.0%)	0 (0.0%)	1 (1.1%)	2 (2.4%)	9 (10.3%)	22 (25.3%)	53 (60.9%)	107.1 (0.000)
Posters displayed	0 (1.1%)	0 (2.3%)	1 (1.1%)	3 (6.9%)	8 (9.6%)	25 (25%)	50 (57%)	96.8 (%)
Receive education on hand hygiene	1 (1.1%)	2 (2.3%)	1 (1.1%)	6 (6.9%)	11 (12.6%)	31 (35.6%)	35 (40.20%)	102.0 (0.000%)
Clear and simple instructions visible	0 (%)	0 (%)	1 (%)	2 (%)	11 (%)	27 (%)	46 (%)	83.4 (%)
Feedback regularly provided	0 (0.0%)	0 (4.6%)	4 (3.4%)	4 (14.6%)	12 (14.2%)	27 (31.2%)	23 (26.4%)	33.2 (0.000%)
Good example for role modeling	0 (0.0%)	0 (4.6%)	5 (3.6%)	3 (14.0%)	11 (14.4%)	27 (31.2%)	22 (26.5%)	33.99 (0.000%)
Patient remind staff	0 (0.0%)	1 (4.5%)	3 (3.4%)	4 (14.7%)	13 (14.3%)	26 (31.1%)	22 (26.3%)	34.2 (0.000%)

Interestingly, there was a significant difference in the respondent's (31%) perception that regular feedback on hand hygiene performance was not as effective as compared with the above mentioned strategies.

Moreover, the respondents perceived that the head of the department ($\chi^2 = 58.6$; $p < 0.05$), colleagues ($\chi^2 = 63$; $p < 0.05$) and patients ($\chi^2 = 64.5$; $p < 0.05$) placed a very high importance in adhering to optimal hand hygiene performance during the care process. These perceptions were found to be significant.

At a personal level, respondents were asked to reflect about their effort to perform good hand hygiene when caring for

patients. Almost half of the respondents considered that it was a big effort on their part to perform hand hygiene in caring for patients.

Furthermore, when asked about their own performance of hand hygiene requiring situation, around 80% of the respondents answered that between 80 -100% of the required situation they perform optimal hand hygiene and the result was significant ($X^2= 127.3$; $p < 0.05$).

DISCUSSION

The study investigated the perception towards hand hygiene among healthcare professionals in the hospital. The results showed that health care professionals have a very high level of knowledge about health care-associated infections and the role of hand hygiene.

First, the study showed that respondents have a very high perception that HAND HYGIENES have a significant impact in patient outcome.

The result showed that majority of the respondents believed that there is a 0-10% chances that hospitalized patients will develop HAND HYGIENE. The result was congruent to the WHO Report in 2011 on the burden of endemic HAND HYGIENE worldwide.

According to the report seven out of 100 hospitalized patients in developed countries and ten out of 100 hospitalized patients in developing countries will develop at least one healthcare-associated infection.

In a similar study conducted by Burnett (2009), clinical ward nurses demonstrates good perceptions about HAND HYGIENES and positive attitudes toward hand hygiene.

However, a secondary finding in the study showed that these high level of awareness was not found to be independently associated with positive behavior. This mean that being knowledgeable does not necessarily translates to high level of compliance. On the other hand, Most of the participants believed that there was a high (54%) and very high (21.8%) impact of HAND HYGIENE in patient's clinical outcome and hand hygiene (99%) remains the single and most effective against HAND HYGIENE.

Previous studies of Tai et al. (2009) showed that 70% of the nurses and 49% of the physicians perceived that over 15% of patients would suffer from healthcare-associated infections. A total of 79% of the nurses and 68% of the physicians believed that more than 5% of patients would die as a result of healthcare-associated infection. A total of 60% of the nurses and 46% of the physicians acknowledged that over 75% of healthcare-associated infections could be prevented by optimal hand hygiene practices.

Second, the results of our study not only confirm with the previous but also showed that majority of the health care professional (99%) had a very high degree of awareness about the effectiveness of hand hygiene against HAND HYGIENE. This awareness can be attributed to formal training attended previously by the respondents.

Nteli et al. (2012) reported that educational activities were important factor to improve health-care workers hand hygiene practices. In contrast, De Wandel et al. (2010) argued that neither having good theoretical knowledge of hand hygiene guidelines nor social influence or moral perceptions does not influence hand hygiene practices. Self-efficacy is a determinant factor for compliance with hand hygiene.

When asked about self-efficacy, half of the respondents considered that it was a big effort on their part to perform hand hygiene in caring for patients and around 80% of the

respondents answered that between 80 -100% of the required situation they perform optimal hand hygiene. Previous study reported that nurses reporting a poor self-efficacy or a poor attitude toward time related barriers appear to be less compliant (De Wandel et al. 2010).

Speaking about factors and determinants, Tai et al. (2009) found that perceived behavioral control and subjective norms were the most important factors associated with the nurses and physicians' self-reported hand hygiene performance. Apart from knowledge and self-efficacy, Sinkowitz-Cochran et al. (2012) added that staff engagement, overwhelmed/stress-chaos, and hospital leadership (Min, 2013) were three organizational factors found to be significantly associated with individual health care personnel knowledge, attitudes, and self-reported hand hygiene practices.

The result confirmed with the previous study, managers' support and promotion of hand hygiene, alcohol-based hand rub availability at each point of care, displays of hand hygiene posters, education on hand hygiene, visible clear and simple instructions for hand hygiene, positive role modeling, and patient reminding healthcare workers to perform hand hygiene were found significant interventions to promote and improve hand hygiene practices in the hospital.

Furthermore, respondent believed that hand hygiene is a very high priority among the head department, colleague and patient in the institution. Interestingly, the study results reported that regular feedback was not an effective measures to encouraged respondents to comply with hand hygiene practices.

The result was unexpected since literatures have well documented the effectiveness of regular feedback in increasing the hand hygiene compliance such as the study of Pessoa-Silva et al. (2007) and Min (2013) who reported that performance feedback is effective in sustaining compliance improvement and is independently associated with infection risk reduction. The

researcher speculated that the low perception about feedback can be attributed to the different cultural perception about feedback, since the hospital employs employee from a multicultural background and another factor could be the manner of delivering the feedback may play an important role.

Min (2013) suggested that education and role modeling at both the individual and organizational levels might be beneficial in improving hand hygiene compliance.

Al-Tawfiq, Abed, Al-Yami, and Birrer (2012) suggested that a multimodal approach using different strategies and intervention such as the WHO hand hygiene campaign (Allegranzi et al., 2013) promotes an institution-wide increase and sustained improvement in the rates of compliance.

Lastly, most respondent preferred alcohol based hand rub as the method of hand hygiene primarily because of the same reasons reported by the literatures such as: it requires less time , acts faster, more accessible than sinks, effective in reducing the number of microorganism, and skin issues were less common (Center for Disease Control, 2010).

In general, the study contributes to support the WHO hand hygiene campaign against HAND HYGIENE. The findings suggest that health care workers have a high level of awareness about HAND HYGIENES and the importance of hand hygiene.

Furthermore, assessment of knowledge thru self-report is not enough to determine compliance of hand hygiene practices.

Observational studies are recommended. This is a small-scale project whose findings are difficult to be generalized because the researcher's respondents came from a single location, the use of a relatively small sample is a limitation of this research.

CONCLUSION

In conclusion, the respondents have a high level of knowledge about HAND HYGIENE. Respondents were aware that HAND HYGIENE has an impact on patient outcome, hospitalized patient will likely develop HAND HYGIENE, and hand hygiene remains to be the single and most effective method against HAND HYGIENE. Respondents reported a high self-efficacy in performing hand hygiene. Organizational factors such as staff engagement, commitment of the department heads, and leadership were perceived to be significant in promoting hand hygiene practices. Strategies such as provision of access to hand hygiene facilities, guidelines, education and training, positive role modeling were effective. There was a low perception about the effectiveness of regular feedback.

Furthermore, observational studies are recommended to objectively measure hand hygiene compliance.

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9. Instagram.
10. Baidu Tieba.
11. Twitter.
12. Viber.
13. Tumblr.

14. Snapchat.
15. LINE.
16. Sina Weibo.
17. VK.
18. Reddit.
19. YY.
20. Taringa!.
21. Telegram.
22. Tagged.
23. Myspace.
24. Badoo.
25. StumbleUpon.
26. Foursquare.
27. MeetMe.
28. Meetup.
29. Skyrock.
30. Delicious.
31. Kiwibox.

PHOTO SHARING NETWORKS

32. Snapfish.
33. Flickr.
34. Photobucket.

35. DeviantArt.

36. Fotolog.

37. Pinterest.

38. Buzznet.

39. We Heart It.

40. Path.

LIFESTYLE NETWORKS

41. Last.fm.

42. ReverbNation.

43. Cross.tv.

44. Flixster.

45. Gaia Online.

46. BlackPlanet.

47. Care2.

48. CaringBridge.

49. VampireFreaks.

50. CafeMom.

51. Ravelry.

52. ASmallWorld.

53. Nextdoor.

TRAVEL NETWORKS

54. Wayn.

55. CouchSurfing.

56. TravBuddy.

MOBILE NETWORKS

57. Cellufun.

58. MocoSpace.

59. Itsmys.

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61. Youku.

62. FunnyorDie.

63. Tout.

64. Vine.

REUNION NETWORKS

65. Classmates.

66. MyLife.

67. MyHeritage.

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69. Ryze.

70. Xing.

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71. WeeWorld.

72. Habbo.

73. Tuenti.

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74. Xanga.

75. Solaborate.

76. Plurk.

77. LiveJournal.

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78. Mixi.

79. Douban.

80. Renren.

81. Odnoklassniki.

82. NK.

83. Netlog.

84. StudiVZ.

85. Friendster.

86. Kaixin001.

87. 51.com.

88. Nexopia.

89. Draugiem.

90. Glocals.

91. Cyworld.

92. <http://www.crokes.com>
93. site <http://www.bebo.com>
94. <http://www.updateland.com>
95. networking <http://sprybirds.com>
96. For expats, <http://www.internations.org>
97. <http://imtools.gq>
98. <http://www.hisocio.com>
99. <http://www.mibusy.com>
100. <http://www.friendsconnectup.com/>
101. <http://enetget.com>
102. bgrgndzdb,
103. <http://www.conint.org>
104. <http://www.seodown.com>
105. <http://www.jointhepuzzle.com>
106. <http://www.kittysbook.com>.
107. <http://www.wpblogging360.com/>
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ARTICLE: VOICE (ACTIVE & PASSIVE) FLOW CHART

TENSE	ACTIVE VOICE	PASSIVE VOICE
SIMPLE PRESENT TENSE	VERB: first form of the verb EXAMPLES They speak English here. He speaks English.	VERB: is / am / are + past participle form of the verb EXAMPLES English is spoken here. English is spoken by him.
PRESENT CONTINUOUS TENSE	VERB: is/am/are + -ing form of the verb EXAMPLES She is writing a letter. I am learning my lessons. You are making a cake.	VERB: is/am/are + being + past participle form of the verb EXAMPLES A letter is being written by her. My lessons are being learnt by me. A cake is being made by you.

<p>PRESENT PERFECT TENSE</p>	<p>VERB: has/have + past participle form of the verb</p> <p>EXAMPLES:</p> <p>I have written a novel.</p> <p>She has finished the job.</p> <p>You have written letters.</p>	<p>VERB: has/have + been + past participle form of the verb</p> <p>EXAMPLES:</p> <p>A novel has been written by me.</p> <p>The job has been finished by her.</p> <p>Letters have been written by you.</p>
<p>SIMPLE PAST</p>	<p>VERB: past tense form of the verb</p> <p>EXAMPLES:</p> <p>I wrote a letter.</p> <p>Ram broke a glass.</p> <p>You missed the chance.</p>	<p>VERB: was/were + past participle form of the verb</p> <p>EXAMPLES:</p> <p>A letter was written by me.</p> <p>A glass was broken by Ram.</p> <p>The chance was missed by you.</p>
<p>PAST CONTINUOUS TENSE</p>	<p>VERB: was/were + -ing form of the verb</p> <p>EXAMPLES</p> <p>I was learning my lessons.</p> <p>She was writing a report.</p> <p>They were making toys.</p>	<p>VERB: was/were + being + past participle form of the verb</p> <p>EXAMPLES</p> <p>My lessons were being learnt by me.</p> <p>A report was being written by her.</p> <p>Toys were being made by them.</p>
<p>PAST PERFECT TENSE</p>	<p>VERB: had + past participle form of the verb</p> <p>EXAMPLES</p> <p>I had finished the project.</p> <p>She had learned her lessons.</p>	<p>VERB: had + been + past participle form of the verb</p> <p>EXAMPLES:</p> <p>The project had been finished by me.</p> <p>Her lessons had been learned by her.</p>

<p>SIMPLE FUTURE TENSE</p>	<p>VERB: will/shall + first form of the verb EXAMPLES I will finish the job. She will solve the problem.</p>	<p>VERB: will/shall + be + past participle form of the verb EXAMPLES: The job will be finished by me. The problem will be solved by her.</p>
<p>FUTURE PERFECT TENSE</p>	<p>VERB: will/shall + have + past participle form of the verb EXAMPLES I will have finished the job. She will have solved the problem.</p>	<p>VERB: will/shall + have + been + past participle form of the verb EXAMPLES The job will have been finished by me. The problem will have been solved by her.</p>

SHORT FORM OF VOICE (ACTIVE/ PASSIVE)

PRESENT TENSE

PST= OBJECT+ HV(IS/ARE/AM)+VERB(III) BY SUBJECT

PCT=O+ HV(IS/ARE/AM)+BEING+V(III) BY S

PPT=O+ HV(HAS/HAVE) BEEN+V(III) BY S

PAST TENSE

PST=O+ HV(WAS/WERE)+V(III) BY S

PCT=O+ HV(WAS/WERE) BEING+V(III) BY S

PPT=O+ HV(HAD)BEEN+V(III) BY S

FUTURE TENSE

FST=O+ HV(WILL/SHALL)BE+V(III) BY S

FPT=O+ HV(WILL/ SHALL) HAVE BEEN+V(III) BY S