

Introduction - Probiotics & Prebiotics



Agenda

1. Probiotics and their beneficial effects?

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3. Probiotic bacteria used in food industry

4. Mechanism of probiotics & prebiotics in human gut

5. Sources & products that are available in market

6. An introduction to Para probiotic and Synbiotics?

7. References

1. What are probiotics & their beneficial effects on human body?

PROBIOTICS



Probiotics : Live bacteria that when taken in adequate amounts ,confer good health benefits.

- Helps in curing diarrhoea
- Irritable bowel syndrome can be prevented
- Lactic acid bacteria helps in curing the colon cancer.
- Urogenital infection can be prevented by taking *L.fermentum* & *rhamanosus*.
- Cholesterol : The effect of yogurt with probiotic agents increase serum level.
- Probiotic has an invitro inhibitory effect that reduce gastric inflammation.

2.What are prebiotics & their beneficial effects on human body?

PREBIOTICS



ONION



SOY BEAN



ASPARAGUS



BANANAS



LEEK



BREAD



ARTICHOKE



GARLIC

Prebiotics : The food that feed probiotic bacteria and help them to grow. Prebiotics cant be digested by human body .

Immune system strength: prebiotic promotes the growth of the colonizing bacteria in the gut that are beneficial .

- **Normal bowel function**: prebiotic fiber cause foods to be digested normally not quickly.
- **Colon cancer** : prebiotics sweep away carcinogens and other danger toxins.
- **Cancer prevention** : probiotic bacteria such as *Bifidobacterium* digests inulin in the gut and produce short chain fatty acids.

3.Probiotic bacteria used in food industry

In bacteria

- ***Lactobacillus***-*L.acidophilus*,*L.brevis*,
L.fermentum, *L.delbruekii*, *L.bulgaricus*,
L.rhamanosus etc
- ***Bifidobacterium*** –*B.thermophilus*,
B.jongum,*B. animalis*,*B.infantis*
- ***Streptococcus*** –
S.lactis,*S.thermophilus*,*S.cremonics*.
- ***Bacillus*** – *B.coagulans*
- ***Pediococcus***- *P.acidlactici*

In fungi

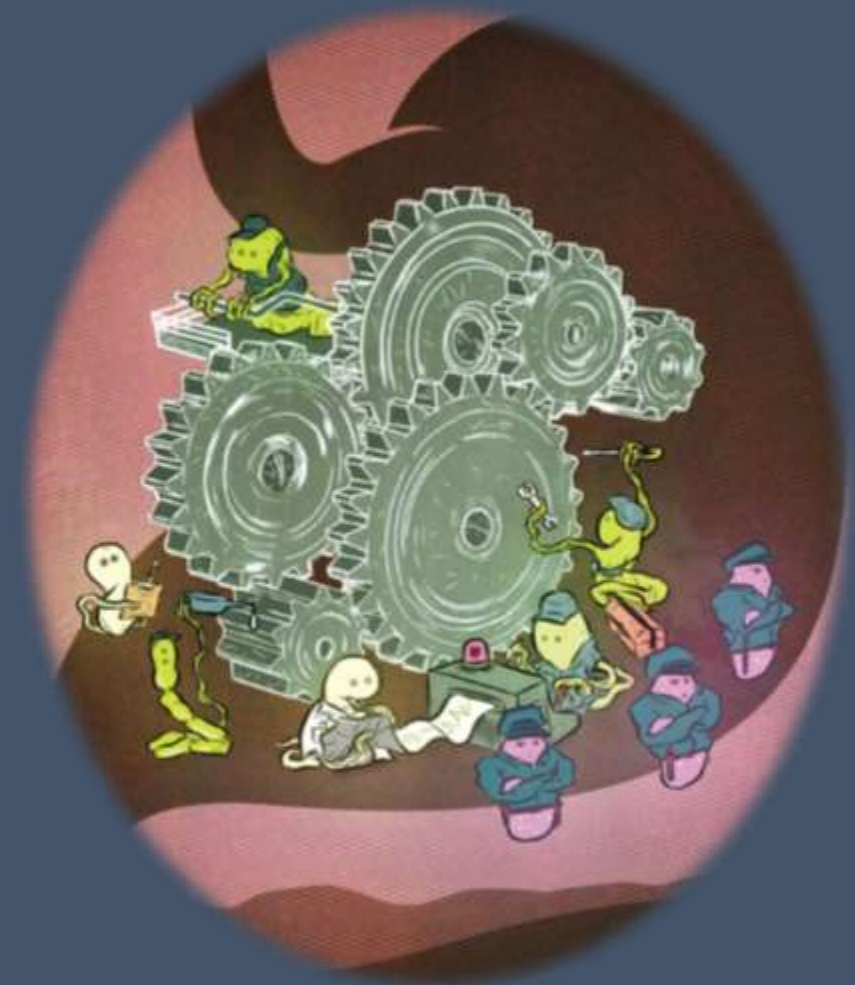
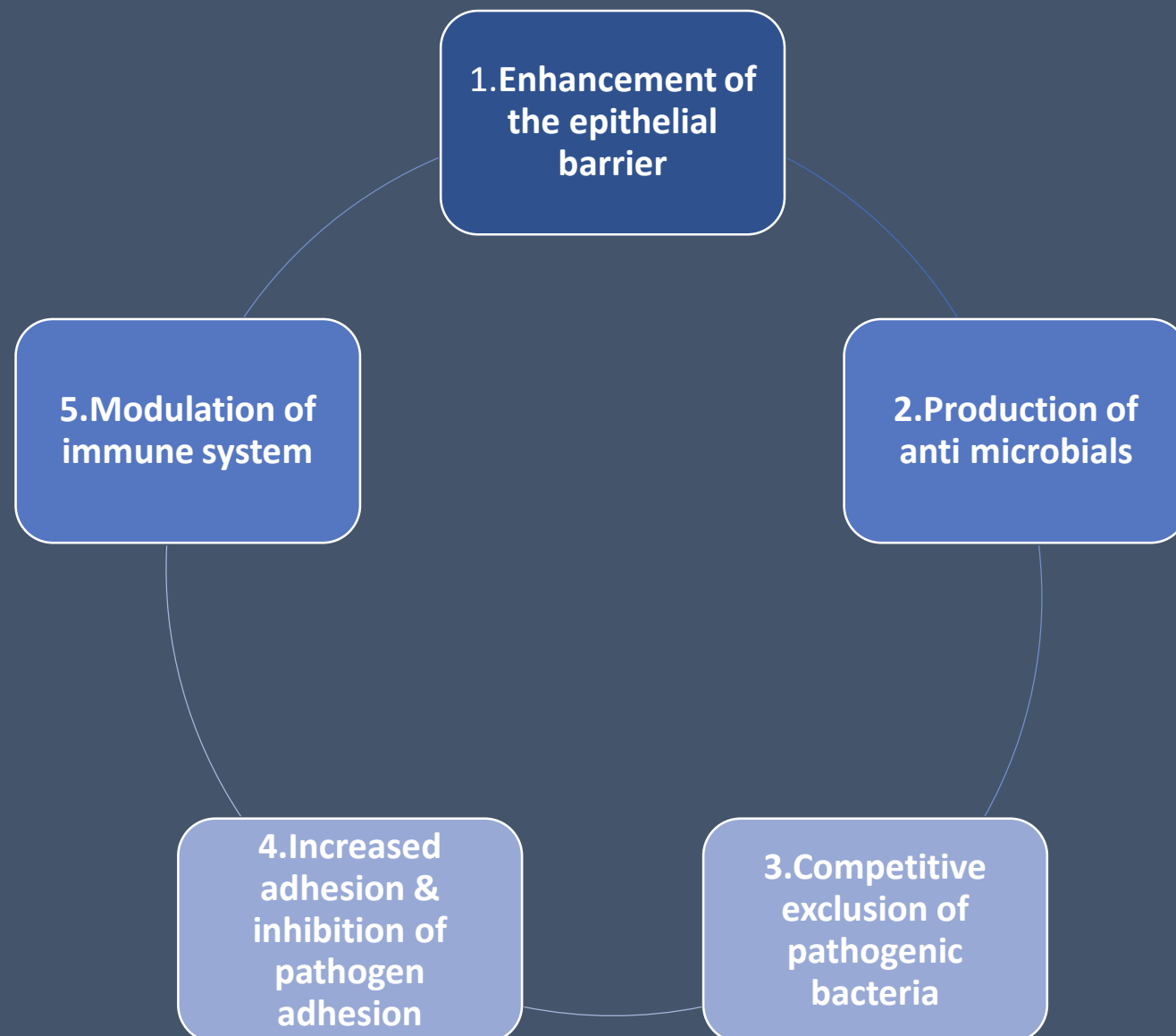
- ***Aspergillus***- *A.niger*, *A.oryzae*

In yeast

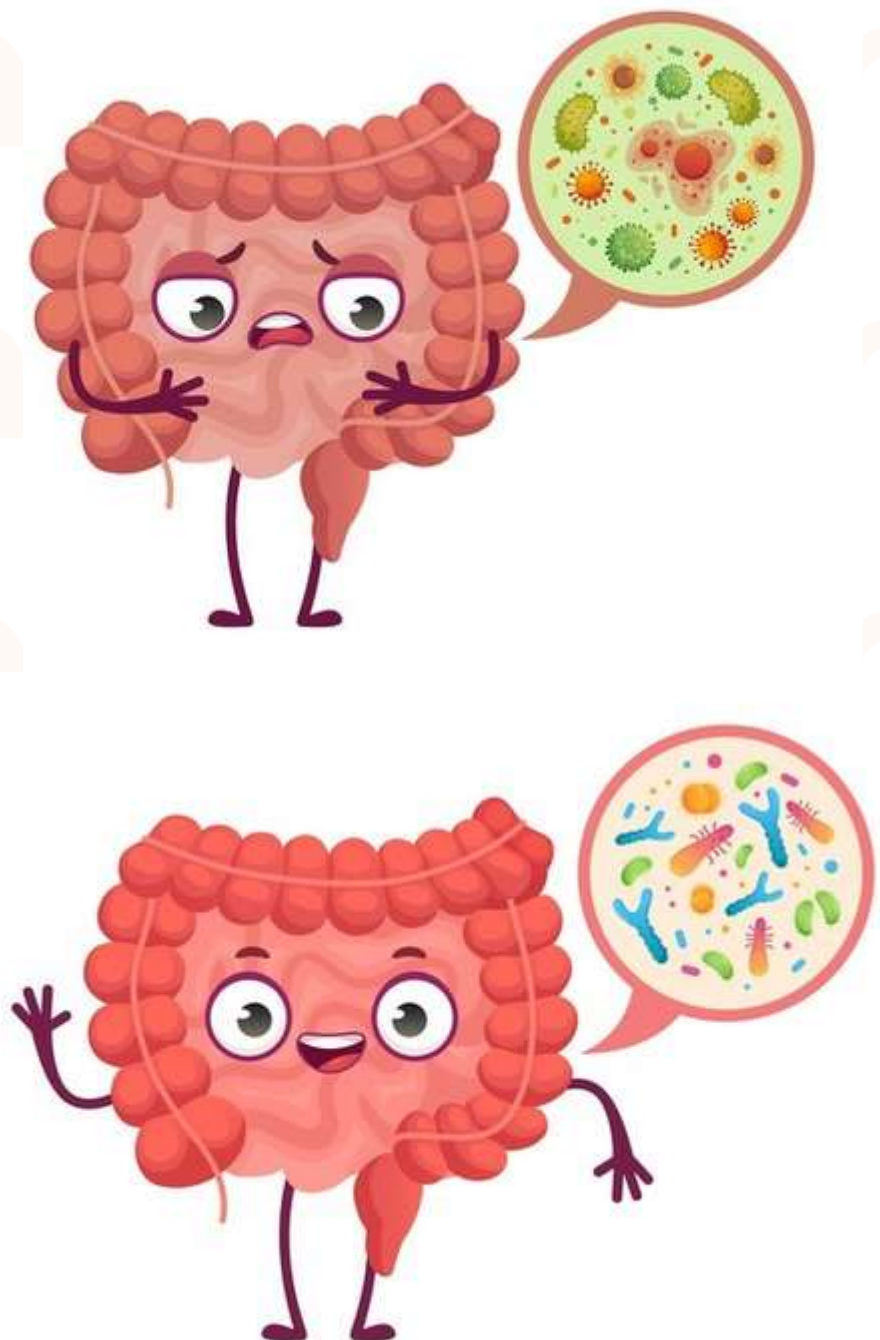
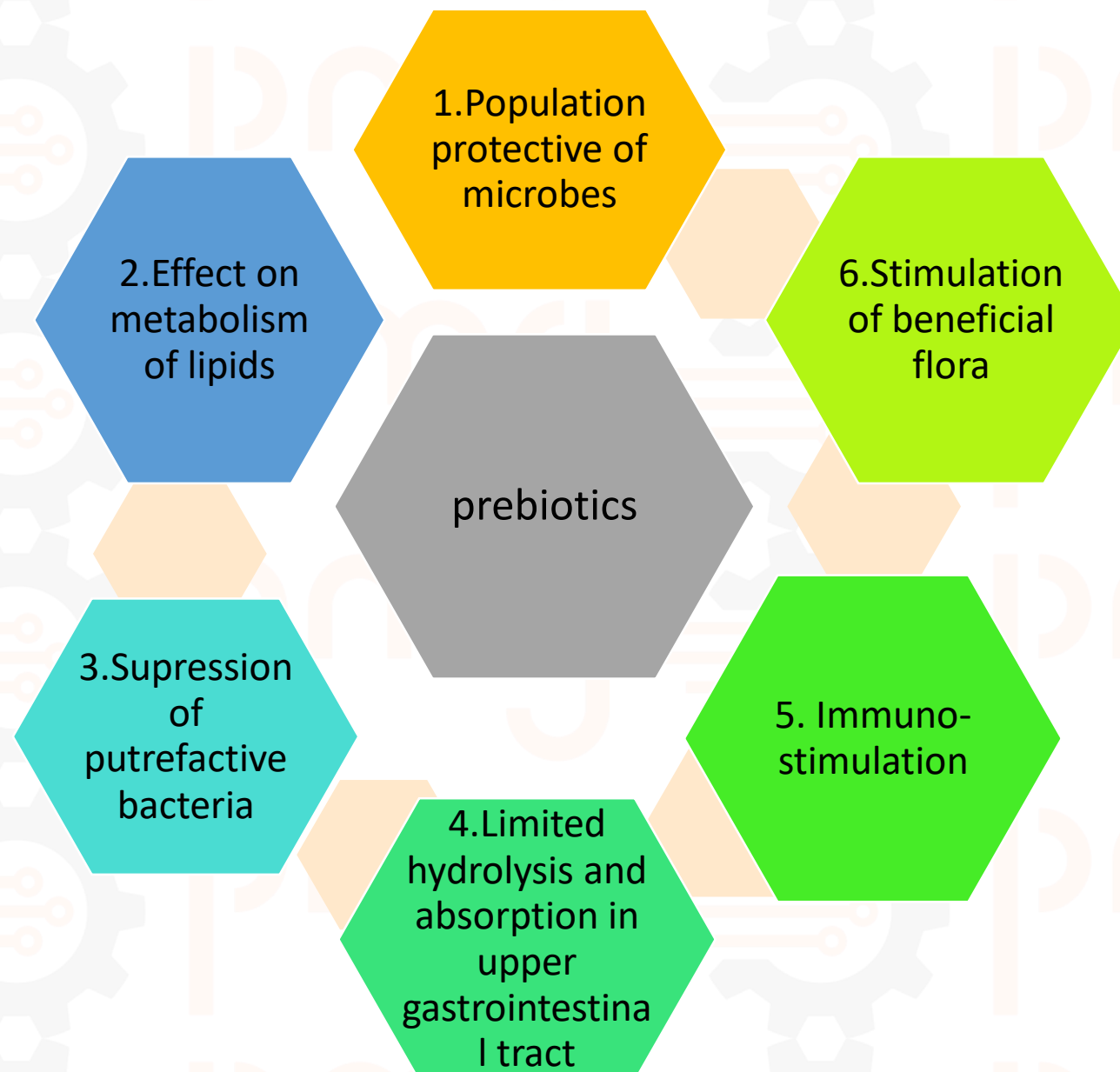
Saccharomyces – *S.cerevisiae*, *S.carlsbergensis*

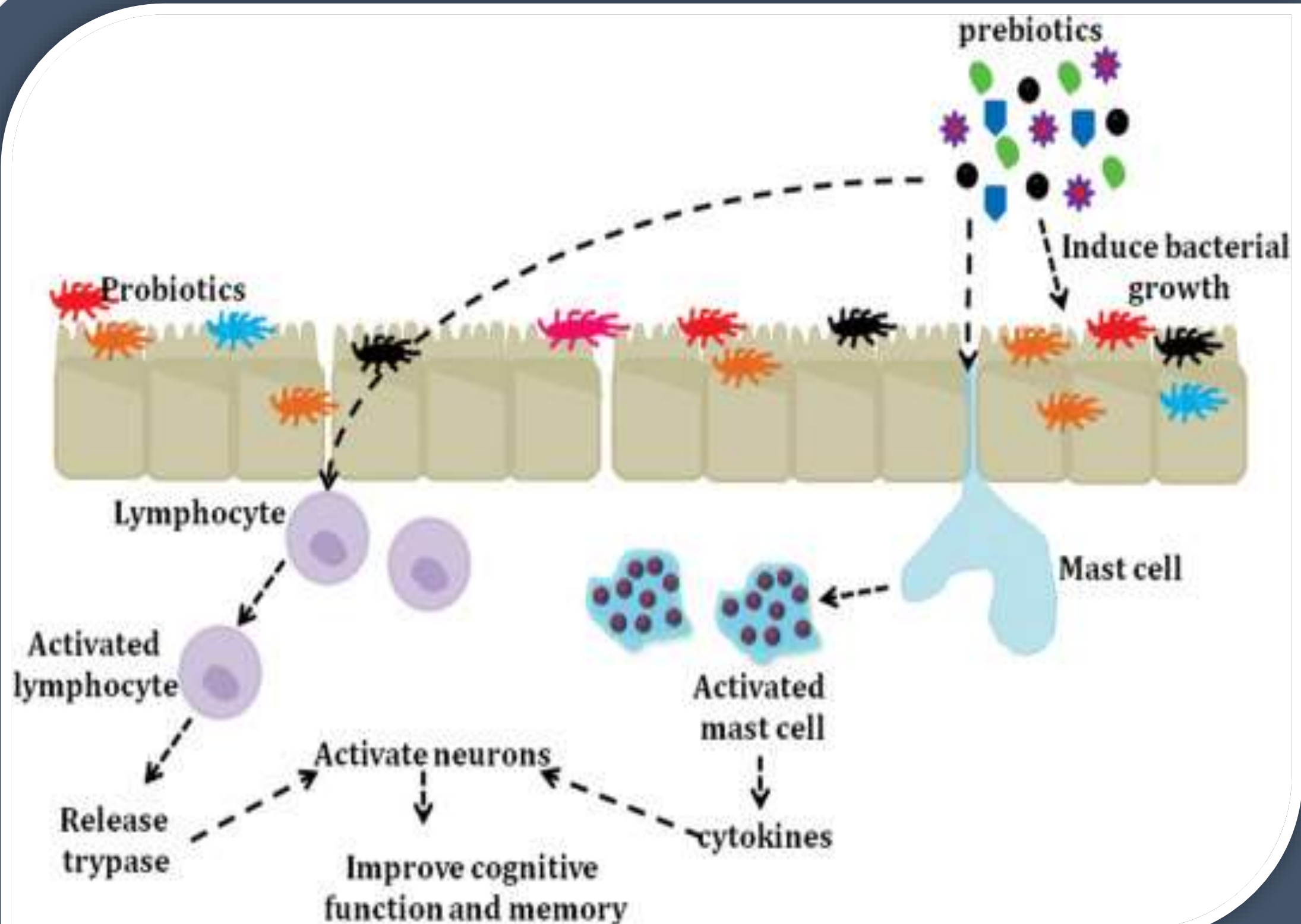


4. Mechanism of probiotics in human gut



4.1 Mechanism of prebiotics in human gut





5. Sources of probiotics

- Tempeh
- Yogurt
- Miso
- Kefir
- Dahi
- Sauerkraut
- Pickle
- Fermented milk



5.1 Products available in market

- Yakult
- Beyond berry
- Good belly
- Dan active
- Amul prolife
- Progurt



5.2.Sources of prebiotics

- **Oligo saccharides:** garlic asparagus, soybean ,wheat bran etc.
- **Fructans :** powder from tubers of artichoke
- **Human kappa casein and derived glycomacropeptide :** chymotrypsin and pepsin hydrolysate .
- **Stachyose and raffinose :** soybean extract.
- **Casein macro peptide :** Bovine milk
- **Lactulose :** synthetic derivative of lactose .



5.3 And the products available in the market

- VSL#3
- Kiwi – klenz
- Prebiotic soups
- Prebiotic nana flakes
- Oli pop
- Wonder drink



6. An introduction to para probiotics

Inactivated microbial cells that confer health benefit when consumed adequately .

- Para probiotics hold the ability to regulate the immune systems ,antiproliferative and antioxidant activities .
- Para probiotics can be administered to weaker immunity people and the elderly
- These products are also characterized by greater stability and can be stored without the cold chain, thereby facilitating industrial handling and wide commercialization



6.1 An introduction to Synbiotics

- Mixture of probiotics and prebiotics are called synbiotics.
- In these the pre and probiotics works synergistically in digestive tracts.
- A synbiotic product beneficially affects the host in improving the survival and implantation of live microbial dietary supplements and by stimulating there growth
- The probiotic strains used in in symbiotic formulations are, *lactobacilli*, *bifidobacteria spp*, *B. boulardii*, *B.coagulans* etc.

Some of the synbiotic products are as follows:

- Synbiotics SB3
- Bellavie synbioceutical



7. References

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