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**Fate map**

1. **Definition**
2. **Construction of Fate map**
3. **Artificial markings**
4. **Natural markings**

 **Definition:**

* **Topographical surface mapping of the egg or blastula based on the ultimate fate of various areas is called Fate map**
* **Ex: It is observed that which cell of the blastula develop into various types of tissues and organs.**
* **So the fate or the final result of each blastomere and each area can be studied.**
* **As a result, the blastula can be marked into different areas, each developing into a particular organ**

**Construction of fate map**

* **Fate map can be constructed in two methods. They are**

**I . Artificial markings:**

 **The fate map of embryos can be easily studied by marking the blastomeres by various means**

**The embryos are marked and bserved by using thee types of substances. They are**

1. **Vital stains (W. Vogt in 1925) Ex, Neutral red, Janus green, Nile blue sulphate,etc.;**
2. **Carbon particles (Spratt): He used carbon particles to mark the blastomeres to follow the movements of the marked cells to constructthe fate map**
3. **Radioactive substances :In recent years the fate map has been constructed well by labelling the embryos with radio active substances like C14, P32, etc.,**
4. **Natural markings**
* **Naturally certain eggs contain different coloured areas.**
* **These areas can be observed and followed during development**
* **Ex: Egg of Frog**
* **In frog egg, 3 different areas can be seen.**
* **The animal hemisphere is black and the vegetal hemisphere is yellowish .**
* **Just below the equator on one side is greyish crescent like area called grey crescent.**
* **black pigmented area develops into the epidermis and the nervous system**
* **The grey crescent develops into the mesoderm and the notochord**
* **The yellowish vegetal hemisphere develops into endoderm of the gut**

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**Fate Map**

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