Home tasks on discipline “**Basics of biotechnology”**

### SIWT 3. Consultation and admission of Student Independent work with Teacher. Student Independent work (SIW) 3. (Report)

### *Title for home tasks*

### Regeneration Methods of Plants in Culture Organogenesis

### Somatic Embryoge

### Insect cell culture

Cells derived from Drosophila melanogaster (most prominently, Schneider 2 cells) can be used for experiments which may be hard to do on live flies or larvae, such as biochemical studies or studies using siRNA. Cell lines derived from the army worm *Spodoptera frugiperda*, and from the cabbage looper, are commonly used for expression of recombinant proteins using baculovirus.

# Factors Affecting Organogenesis in Plant Tissue Culture

SIWT 4. Consultation and admission of Student Independent work with Teacher. Student Independent work (SIW) 4. (Report)

### *Title for home tasks*

Problems that can Occur in Tissue Culture

Culture Contamination

Hyperhydricity

Browning of Explants

Types of Organogenesis

Analysis of Transgenic Plants

Organogenesis is the process of forming a specific organ from non-specific mass of meristem or parenchyma cell known as callus. In this experiment, auxin and cytokinin are used to determine the effect of PGR, auxin and cytokinin on the organogenesis in carrots and petunia leaves, in which auxin hormones responsible for growth of roots, phototropism and gravitropism, while, cytokinin helps in inducing the growth of shoots and regulates auxin action. Theoretically, the presence of high cytokinin and low auxin in the media, the shoots will form, meanwhile, in low level of cytokinin and high level of auxin in the media, roots will form. Meanwhile, in the presence of high concentration of both cytokinin and auxin, callus formation will be induced. However, in this experiment, production of the shoots and roots are not compatible with the theory due to improper ratio of auxin and cytokinin and the high toxicity of synthetic cytokinin, kinetin.