Minutes Thursday, 26th, Feb., 2009

Proposed course for procession with iGEM project:

1) **Picking up where we left last year (Ecolicence to Kill)**

-Modification of Lux-Q receptor to be active in chemotaxis (since the first one wasn't).
-Screen for cancer-specific substances that could be used for chemotactic signalling.
-Perform assays to determine whether chemotactic signalling between bacteria and cancer cells in particular actually works, or if we should drop the idea altogether.

-In engineered lambda-phage:

- Remove the smad7 point mutation and ligate the new fragment into the lambda genome
  Expected to be challenging since we need to ligate 5x30 kb fragments
  Re-perform all previous experiments with the new lambda construct.

-Purified CholiI:

- Test purified form on bacterial and eukaryotic cells.
- Test if the effect is tumour specific or if it affects non-tumour cells as well, and in what ways to which extent.
- Test it in mice to determine possible toxicity levels and side effects.

-Collaboration with Braunschweig:

- They have shown preferential accumulation of Shegella in tumour cells, even without chemotactic signals.
- Determine what the bacteria could carry into the tumour (anti-carcinogenic substances)
- What cancer-specific promoters could be used in constructs carried by those vector bacteria.

2) **Cancer cells detection system as an application for Apoptosis – Autophay interaction**

- Stress detection systems → (tagging for apatmers / upregulation of degradation machinery)
  E-GFR overexpressoion in Cancer cells / Bax overexpression → visual input → multitude of sensors

- Assay development:
  ROS / Ca2+ / Autophagy → Color coded receptors (FPF/ YFP)--> RAINBOW!

- Development of Eukaryotic Biobricks Library:

- Fluorescent Proteins
- Subcellular Tags Sensors
  → Plug-Play (Recombineering)
  For more details, contact topic presenter postdoc. Nathan Brady at n.*brady*@*dkfz*-heidelberg.de

Best Regards,

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