Viability study using LigandTracer® Yellow

This protocol describes how to perform a viability study using LigandTracer Yellow, by following ^{51}Cr release in real-time.

Important information

Possession and handling of radioactive material may require licenses and/or special training according to national or local regulations or laws. Do not follow this protocol unless all legal requirements regarding possession and handling of radioactive material are met.

Do not keep LigandTracer Yellow in an incubator for more than 12 h at a time as this may damage the detector. After running in an incubator, let the instrument recover in ambient conditions during 12 h.

Materials

- Cell dish, 87-89 mm (diameter) and about 15 mm (height), containing approximately 1 million cells in a local area (please refer to the protocol Seeding cells for LigandTracer)
- ^{51}Cr
- The molecule you want to study the toxicity of
- Cell culture media

Procedure

1. Place LigandTracer Yellow in an incubator (preferably humidified, 37°C, 5% CO_2) and let it equilibrate for 1 h.
2. Replace the media in the cell dish with 3 ml of fresh cell culture media. Place it in the temperature equilibrated LigandTracer Yellow.
3. Start a measurement, using e.g. one of the pre-defined templates in LigandTracer Control. Run a baseline measurement for a few minutes.
4. Pause the measurement and add 0.5-3 MBq ^{51}Cr. Incubate for at least 2 h to let ^{51}Cr incorporate into the cells.
5. Pause the measurement and replace the ^{51}Cr solution with 3 ml of cell culture media containing the molecule you would like to study. Continue the run. If the molecule is toxic, the cell will release ^{51}Cr which can be followed and measured over time.
6. Repeat steps 1-5 using e.g. different concentrations of the toxic agent, or another toxic compound, for comparison.