

Dr Gunnel Halldén



Research Interests

My research is focused on developing novel treatment strategies for treatment-resistant prostate and pancreatic cancers. We use a combination of oncolytic adenoviruses (virotherapy) and cytotoxic factors. I focus on:

- Genetically modifying adenoviruses for selective replication in cancer cells and to eliminate toxicity to normal cells.
- Engineering the cancer-selective mutants to enhance chemotherapy-induced apoptosis and inhibit cell survival and rescue pathways including autophagy signaling.
- Generating potent and selective mutants by exploiting the deregulated cellular pathways in cancer cells.
- Investigating current cytotoxic drugs and small molecule inhibitors for synergistic interactions with our oncolytic mutants with the aim of reversing drug resistance.
- Dissecting the molecular signaling pathways that cause the enhanced cell killing to discover novel therapeutic targets.

Major Funders

- Pancreatic Cancer Research Fund
- Prostate Cancer Research Foundation
- Flavell Bequest in Prostate Cancer Gene Therapy

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Recent Publications

- Oncolytic virotherapy with modified adenoviruses and novel therapeutic targets. **Halldén G**, Portella G. *Expert Opin Ther Targets*. 2012; 16(10):945-58.
- Adenovirus-mediated sensitization to the cytotoxic drugs docetaxel and mitoxantrone is dependent on regulatory domains in the E1ACR1 gene-region. Miranda E, Maya Pineda H, Öberg D, Cherubini G, Garate Z, Lemoine N, **Halldén G**. *PLOS One* 2012; 7(10): e46617
- Synergistic and Selective Cancer Cell Killing Mediated by the Oncolytic Adenoviral Mutant AdΔΔ and Dietary Phytochemicals in Prostate Cancer Models. Adam V, Ekblad M, Sweeney K, Müller H, Busch KH, Johnsen CT, Kang NR, Lemoine NR, **Halldén G**. *Hum Gene Ther*. 2012; 23(9):1003-15.
- Inhibition of autophagy enhances the effects of E1A-defective oncolytic adenovirus dl922-947 against glioma cells in vitro and in vivo. Botta G, Passaro C, Libertini S, Abagnale A, Barbato S, Maione AS, **Halldén G**, Beguinot F, Formisano P, Portella G. *Hum Gene Ther*. 2012; 23(6):623-34.
- The oncolytic adenovirus AdΔΔ enhances selective cancer cell killing in combination with DNA damaging drugs in pancreatic cancer models. Cherubini G, Kallin C, Mozetic A, HammarénBusch K, Müller H, Lemoine NR, **Halldén G**. *Gene Therapy* 2011; 18(12): 1157-65.
- Improved potency and selectivity of an oncolytic E1ACR2 and E1B19K deleted adenoviral mutant in prostate and pancreatic cancers. Öberg D, Yanover E, Adam V, Sweeney K, Costas C, Lemoine NR, **Halldén G**. *Clin Cancer Res* 2010; 16(2): 541-53.

