The cyclin-dependent kinase 4/6 inhibitor LEE011 (ribociclib) demonstrates antiproliferative effects in neuroendocrine tumor cells

*in vitro*

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**Aim**
To investigate the effects of LEE011 on neuroendocrine tumor (NET) cell growth and signaling *in vitro*

**Introduction**
Cyclin-dependent kinases (CDKs) are crucial for the cell cycle regulation and alterations of the cell cycle and its regulators are often observed in human malignancies. CDK4/6 in particular orchestrates the G1 phase progression and the G1/S transition.

The cyclin-dependent kinase 4/6 inhibitor LEE011 (ribociclib) demonstrates antiproliferative effects in neuroendocrine tumor cells *in vitro*

**Methods**

- **Human pancreatic** BON1, pancreatic islet QGP1, pulmonary H727 and ileal GOT1
- **NET cells**
  - different concentrations of LEE011 (kindly provided by NOVARTIS, Basel) alone and in combination with 5-fluorouracil (5-FU) (5µM), Everolimus (10nM) and different times of incubation (from 48h to 144h)

**Results**

**Flowcytometric analysis**

Statistical analysis was performed using the Kruskal-Wallis Test and Mann-Whitney Test or the student T-Test of the SPSS statistical package, considering p<0.05. At least three independent experiments were executed.

**Conclusion**
Consequently, the CDK4/6 inhibitor LEE011 demonstrates promising anti-cancer properties for NETs *in vitro*. Further pre-clinical studies exploring the putative role of LEE011 in combinational treatments in these cell lines are currently ongoing.