**Outline**  
**LNC R&D Pipeline**

<table>
<thead>
<tr>
<th>177Lu – LNC1004 (FAPI)</th>
<th>Prof. Xiaoyuan (Shawn) Chen et al.</th>
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<tbody>
<tr>
<td>• Therapeutic radiopharmaceutical targeting FAP-positive solid tumors</td>
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<tr>
<th>177Lu – LNC1010 (TATE)</th>
<th>Yantai LNC Biotechnology Co., Ltd</th>
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<tbody>
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<td>• Optimised TATE compound on neuroendocrine tumors (NETs)</td>
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<th>68Ga – LNC1007 (FAPI-RGD)</th>
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<td>• Heterodimeric dual-targeting radiotracer imaging on a pan-tumoral basis</td>
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177Lu-LNC1004 - Advanced FAP-Positive Solid Tumors
**177Lu-LNC1004**  
FDA IND Approved

- Preclinical biodistribution studies in mice showing high tumor uptake
- 177Lu-1004 injection is observed with tumor growth inhibition effect

Pre-clinical studies

- High binding affinity
- High targeting specificity
- Tumor growth inhibition
- Low background signal
- Improved tumor accumulation (SPECT)
- High tumor uptake

Image of preclinical biodistribution studies in mice showing high tumor uptake.
A 34-year-old patient received 3.7 GBq of $^{177}$Lu-LNC1004
- radiiodine-refractory differentiated thyroid cancer
6 weeks after the 2nd cycle of $^{177}$Lu-LNC1004 therapy (RECIST: PR)
- $^{68}$Ga-FAPI-46 PET/CT restaging
- reduced radiotracer uptake and tumor size in most metastatic lesions.
177Lu-LNC1010 showed higher tumor uptake and longer tumor retention in the treatment of metastatic NETs compared to 177Lu-EB-TATE.

177Lu-LNC1010 was likely to tolerate a dose of 3.7 GBq/course well in dose-climbing tests.

177Lu-LNC1010 has great potential for low-dose peptide receptor radionuclide therapy of NETs.
A 63-year-old man with metastatic pancreatic neuroendocrine tumor received an experimental therapy with 3.7 GBq of $^{177}$Lu-LNC-1010.

6 weeks after the 2nd cycle of PRRT, restaging by $^{68}$Ga-DOTATATE PET/CT revealed a partial response.
A newly synthesized bi-specific heterodimeric PET radiotracer

$^{68}$Ga-LNC1007
([68Ga]Ga-FAPI-RGD)
**68Ga-LNC1007** Pre-clinical Study

- A bi-specific heterodimeric radiotracer targeting both FAP and $\alpha_v\beta_3$
  - Enhanced tumor uptake and retention
  - Good stability
  - Favorable binding affinity and specificity
  - High tumor-to-background ratio (TBRs)

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**68Ga-LNC1007 PET imaging in vivo**
The biodistribution of $^{68}$Ga-LNC1007 in normal organs and lung neoplasm

The first-in-human biodistribution study in patient with lung cancer

- High TBRs for high diagnostic performance
- Favorable tracer kinetics for potential therapeutic applications.

$^{68}$Ga-LNC1007 PET MIP images comparing 1h and 3h post-injection showing better contrast and image quality
MIP images $^{68}$Ga-LNC1007 and $^{18}$F-FDG PET in patients with different types of cancer

<table>
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<tr>
<th>Tumor Type</th>
<th>MIP Image</th>
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<tr>
<td>Renal Cancer</td>
<td>$^{68}$Ga-LNC1007</td>
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<tr>
<td>Lung Cancer</td>
<td>$^{18}$F-FDG</td>
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<tr>
<td>Nasopharynx Cancer</td>
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<tr>
<td>Breast Cancer</td>
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<tr>
<td>Esophagus Cancer</td>
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<td>Gastric Cancer</td>
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<td>Pancreatic Cancer</td>
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<td>Liver Cancer</td>
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<td>Thyroid Cancer</td>
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<td>Ovarian Cancer</td>
<td>$^{18}$F-FDG</td>
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Comparing with $^{18}$F-FDG PET imaging
$^{68}$Ga-LNC1007 showed
• More lesions and higher TBRs
• Additional undetected skull metastasis (FAP$^+$)

Comparing with $^{68}$Ga-FAPI-46 PET imaging
$^{68}$Ga-LNC1007 showed
• Higher tracer uptake and higher TBRs
• Additional metastases sites ($\alpha_\beta_3^+$) visualized
THANKS!

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