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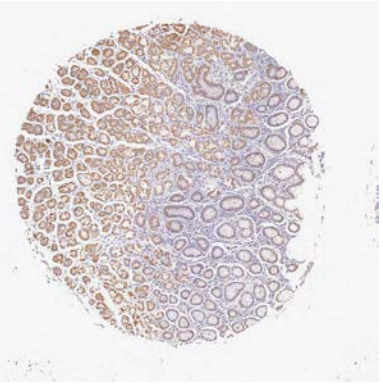
PICK1 modulates the proliferation and migration of gastric cancer cells by regulating TLR4

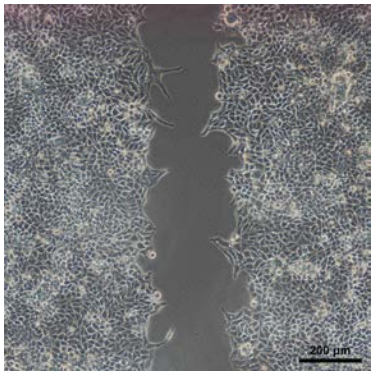
Key words: Protein interacting with C kinase 1 (PICK1); Gastric cancer; Toll-like receptor 4 (TLR4); Myeloid differentiation primary response 88 (MyD88) signaling pathway; Autophagy

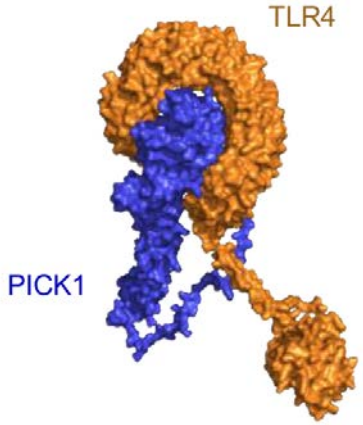
Research Summary

This research mainly focused on the expression and effects of PICK1 on gastric cancer cells and interaction with TLR4. It was organized around the following aspects:



- **Expression of PICK1 in gastric cancer**
- **Effect of PICK1 overexpression on the growth and cell cycle of gastric cancer cells**
- **Effects of PICK1 overexpression on migration and TLR4 protein expression of gastric cancer cells**
- **Effect of PICK1 down-regulation on proliferation and TLR4 protein expression in gastric cancer cells**
- **Interaction between PICK1 and TLR4**
- **Binding energy of PICK1 and TLR4**





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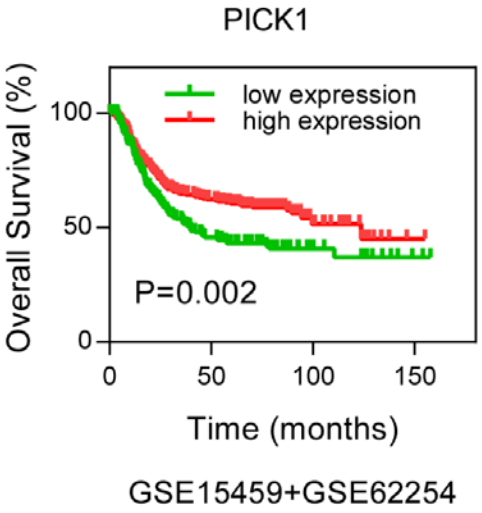
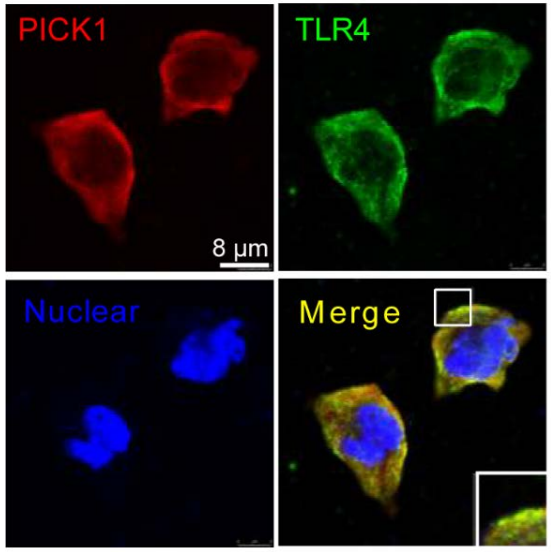
Innovation points



- **Revealing the relationship between PICK1 and the prognosis of gastric cancer**

- **Discovering the relationship between PICK1 and TLR4 protein interaction**



- **Highlighting PICK1's role in TLR4 trafficking and degradation via autophagy**

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Innovation points

This contributes novel perspectives on PICK1's cellular functions, providing potential therapeutic implications for gastric cancer.

Figure 1 | Expression and Kaplan-Meier survival analysis of protein interacting with C kinase 1 (PICK1).

Figure 2 | PICK1 overexpression inhibits AGS cell growth and induces cell cycle arrest.

Figure 3 | PICK1 overexpression inhibits cell migration and toll-like receptor 4 (TLR4) protein expression in gastric cells.

Figure 4 | Effects of downregulation of PICK1 gene on AGS cells.

Figure 5 | Interaction between PICK1 and TLR4.

Figure 6 | Binding energy of PICK1 and TLR4 by molecular dynamics simulations.

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