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The anti-inflammatory potential of protease inhibitors from legume seeds in the gut

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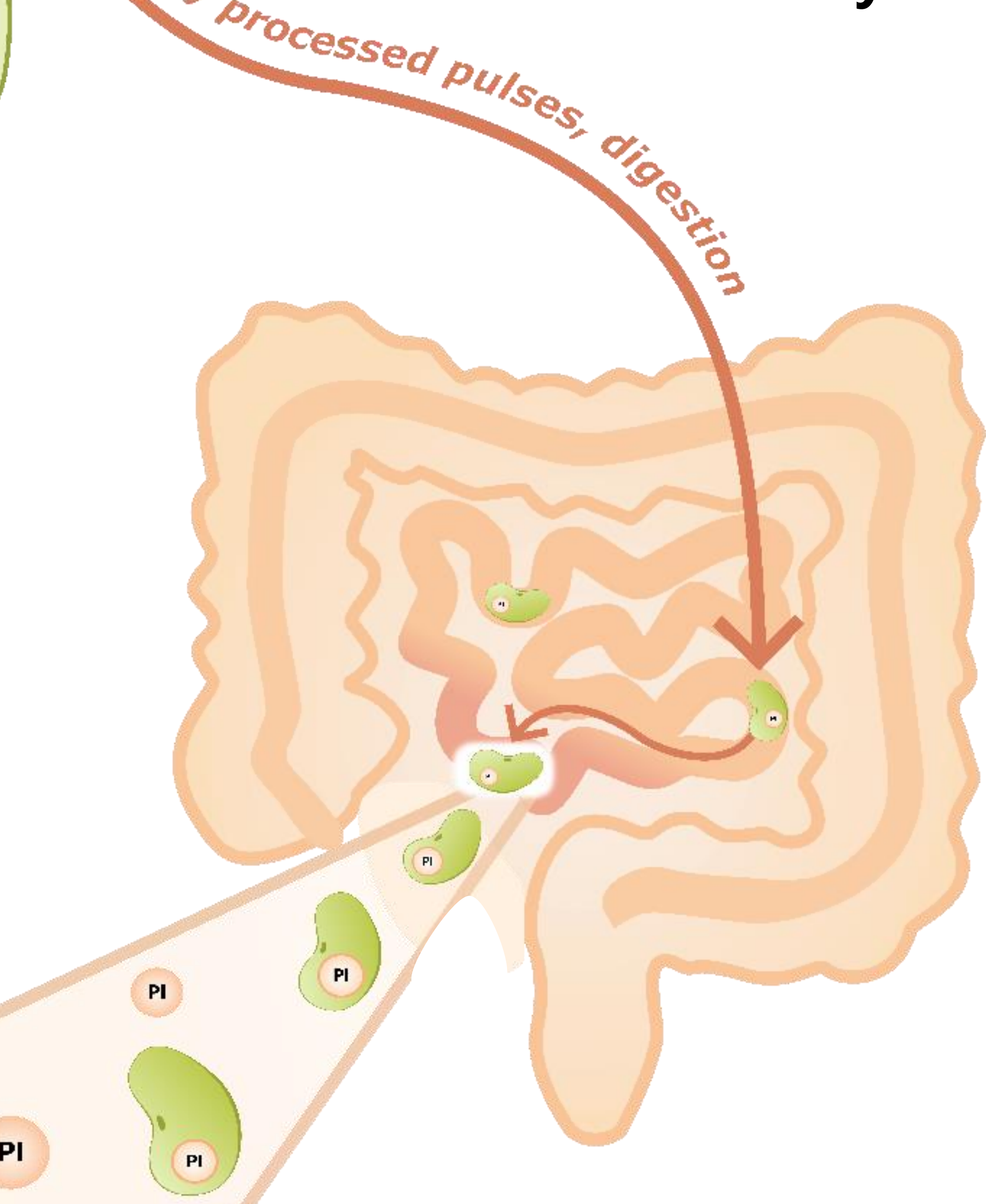
1. INTRODUCTION

Up to 10% of proteins from **legume seeds**, called '**pulses**', are **protease inhibitors** (**PI**), known for impairing dietary protein digestibility and bioavailability.
Nevertheless, their **health-promoting properties** in adults and infants have been suggested and limitedly documented.
It has been shown that soybean and lupin seeds contain PIs that efficiently resist digestion and **inhibit** proteases involved in gut-inflammation, namely the **matrix metalloproteinases** (**MMP**).
Pulse PIs are potentially **health-promoting proteins** that support a **healthy gut**.

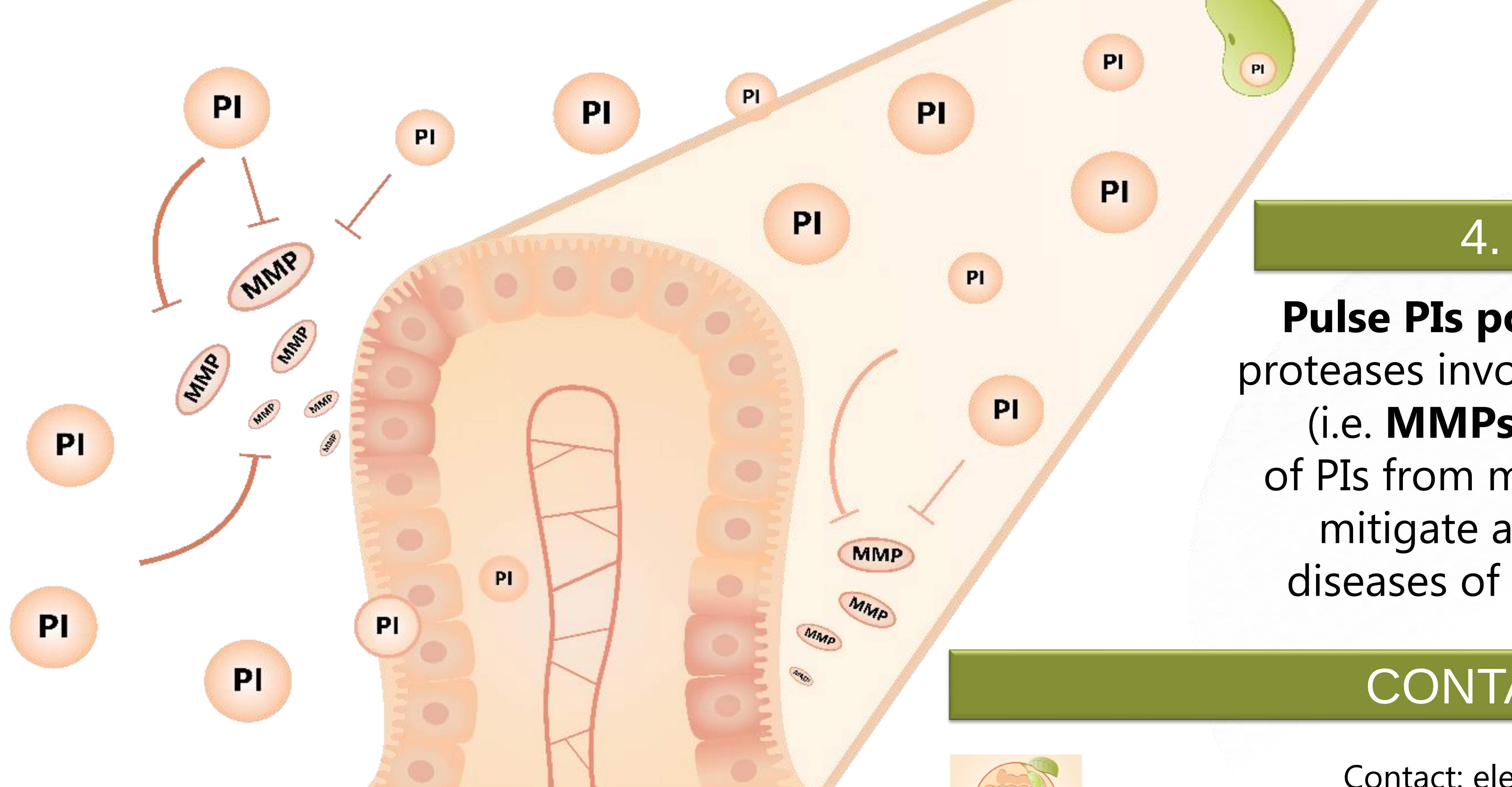
2. AIMS

- Investigation of **PIs from slightly processed pulses** (e.g. boiled, fermented) after **mimicked gastro-intestinal digestion**.
- Re-evaluation of pulse PIs as beneficial immune-modulatory food ingredients upon **MMP inhibition in the gut**. Re-thinking of pulse PIs as key proteins to mitigate and **prevent gut-associated inflammatory diseases**.



3. APPROACH

- **Characterization of** protease inhibitors (**PI**) from peas, faba beans and lupins grown in Denmark.
- Investigation of the impact of **food processing and human digestion** on pulse PIs. Re-characterization of PIs.
- Investigation of the anti-inflammatory activity of pulse PI for improved gut health. **Gut inflammation processes mimicked *in vitro*** to disentangle the interplay between PIs, MMPs and inflammation resolution.



4. CONCLUSION

Pulse PIs potentially inhibit human proteases involved in gut inflammation (i.e. **MMPs**). A regular consumption of PIs from mild processed pulses can mitigate and prevent inflammatory diseases of the gastrointestinal tract.

CONTACTS

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