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Molecular Pathogenesis of Acetaminophen-induced Liver Injury and Its Treatment Options

Key words: **Acetaminophen; Acetaminophen-induced liver injury; Hepatocyte necrosis; Sterile inflammation; Hepatocyte regeneration**

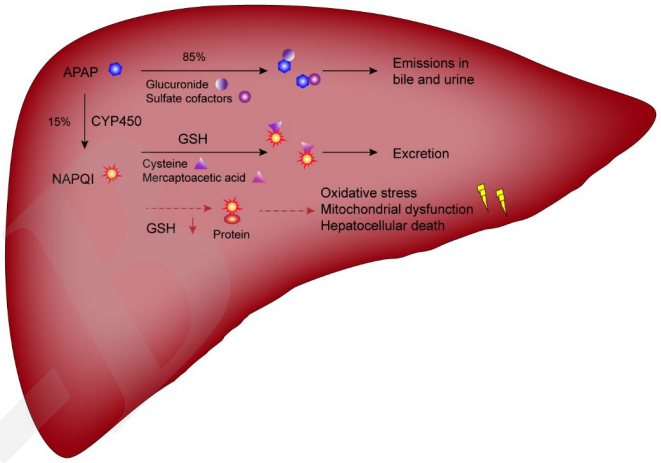
Research Summary

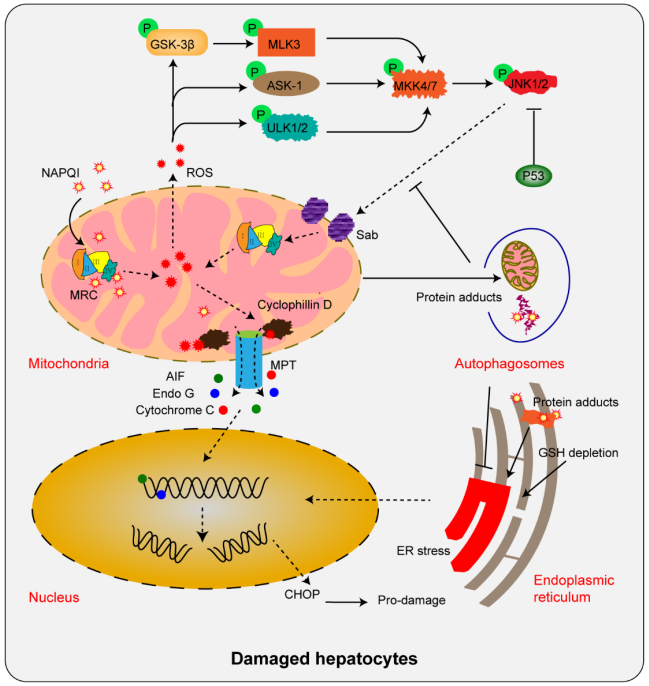
This review mainly focused on three main mechanisms involved in the pathogenesis of AILI: hepatocyte necrosis, sterile inflammation and hepatocyte regeneration.

Moreover, the current potential treatment options for AILI patients and promising novel strategies available to researchers and pharmacists were described.

Innovation points

- **Introduction** of the metabolic process of acetaminophen.
- **Summary** of three main mechanisms involved in the pathogenesis of acetaminophen-induced liver injury (AILI).
- **Emphasis** of current potential treatment strategies for AILI patients.





Innovation points

A series of comprehensive figures and tables were generated to summarize the latest knowledge about the pathogenesis and treatments of AILI.

Figure 1 | Schematic diagram of APAP metabolism.

Figure 2 | Mitochondrial oxidative/nitrosative stress and dysfunction.

Figure 3 | Roles of JNK, P38 and ERK activation in AILI.

Figure 4 | Involvement of Sterile Inflammation in AILI.

Figure 5 | HPCs regenerated under the action of signal mediators and immune cells.

Table 1 | Well-defined cytokines involved in the pathogenesis of AILI.

Table 2 | Cytokines with controversial roles in the pathogenesis of AILI.