Therapeutic Regulation of the Host Response to Biomaterials by Inhibition of Inflammasome Pathways

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Description:

- Implantation of biomaterials and devices into soft tissues leads to the development of the foreign body response (FBR), which can interfere with implant function and eventually lead to failure—currently there are no therapeutic options.
- FBR consists of overlapping acute and persistent inflammatory phases coupled with collagenous encapsulation of the foreign material.
- Yale researchers have identified that the acute inflammatory response to biomaterials can be limited by inhibition of inflammasome-related pathways.
- Aspirin significantly reduces the FBR in response to silicone implants, as shown in figures (*\(P < 0.05\))
- Advantages:
  - Improve the function of biomaterials
  - Reduce the need to replace biomaterials and devices
  - Reduce side effects from inflammation related to biomaterials
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