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