[183] NEXT GENERATION CAR-T ENGINEERING SOLVING THE 'ON-TARGET' 'OFF-TUMOR' ISSUE TOWARDS BROADER, SAFER AND EFFECTIVE CAR-T THERAPIES

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- **Investment_Rational**
  ImmPACT-Bio, based at FutuRx bio-accelerator established by JJDC, Takeda Ventures Inc, OrbiMed Israel Partners and the Israeli Innovation Authority, is developing a novel CAR-T approach addressing the safety issues associated with 'off-tumor' activity. 'Off-tumor' reactivity occurs when the CAR's target antigen is shared with normal tissues. However, as normal tissues express surface antigens, missing on tumor cells, they can be targeted by a CAR possessing an inhibitory signal. ImmPACT-Bio is developing a dual CAR product by co-expressing CARs against shared and non-shared antigens, possessing an activating and inhibitory signaling respectively, thus protecting normal tissues while specifically attacking the tumor. This innovative approach potentially broadens the range of tumor antigens which can be safely targeted by CAR T-cells thus expanding the scope of cancer indications suitable for CAR-T treatment.

- **Business_Strategy**
  ImmPACT-Bio's technology has the potential to make CAR-T therapies applicable to many cancer indications. ImmPACT-Bio selected pairs of activating CAR (aCAR) and inhibitory CAR (iCAR) and plans to develop them towards IND enabling studies. In parallel, co-development or out-licensing of additional pairs (aCAR/iCAR) is considered.

- **Core_Technology**
  ImmPACT-Bio's technology enables the use of CAR-T therapies for solid tumors despite the paucity of tumor specific antigens. ImmPACT-Bio is engineering T-cells to respond in an antigen selective manner discriminating between cancer and healthy cells.

- **Product Profile/Pipeline**
  ImmPACT-Bio developed a computational discovery process of novel iCAR targets, generating a pipeline of therapeutic targets. The first target has already entered lab validation phase, demonstrating specific killing of target cells while sparing 'off-tumor' cells. ImmPACT-Bio's technology has a significant market potential as it can be applied to any cancer indication susceptible to immunotherapy and with any other CAR technology.

- **What's_Next?**
  ImmPACT-Bio is focusing on advancing wet validation of its first iCAR target towards establishment of pre-clinical PoC. In parallel, the company has selected novel targets, identified by computational analysis, and is about to start developing specific antibodies directed at these targets to be used in the company's future CAR constructs