





Bluebird bio: summary of recent CAR-T/IO business alliances/deals\$

Company	Partner	Date	Area	Details
 bluebirdbio	Novartis AG	2nd May 2017	Non-exclusive licensing of proprietary Lentiviral patent rights	Financial terms of the agreement include an upfront payment to bluebird as well as milestone and royalty payments.
 bluebirdbio	Lonza	9th June 2016	Long-term Commercial Manufacturing Agreement for Lenti-D™ and LentiGlobin™ Drug Products	Financial terms not disclosed
 bluebirdbio	ViroMed	3rd December 2015	Exclusive license agreement to research, develop and commercialize chimeric antigen receptor (CAR) T cell therapies using ViroMed's proprietary humanized antibody	\$1m upfront payment and subsequent milestone payments to ViroMed. Could total over \$48 million per licensed product if certain development and regulatory milestones are achieved. Tiered royalties
 bluebirdbio	Kite Pharma	22nd June 2015	Collaboration agreement to co-develop and co-commercialize second generation T cell receptor (TCR) product candidates, HPV*	Both companies will share overall costs, including R&D/sales/marketing expenses. Profits will be equally split between the companies

*HPV = human papilloma virus

\$ not an exhaustive list IO = immuno-oncology

About iOnco Analytics:

iOnco Analytics is a subdivision of VacZine Analytics, a world leading supplier of vaccine market analyses

With our product lines:

- ① MarketVIEW
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Our role is to define market potential and strategy of new cancer immunotherapies

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