BEMPEGaldesleukin Preferential Signaling Through the IL-2 Receptor Pathway

- BEMPEGaldesleukin (BEMPEG) is a G4 fusion protein with the receptor-interacting motifs of the IL-2 receptor alpha chain (CD25). It is currently under development for cancer therapy due to its ability to preferentially bind and activate the IL-2 receptor pathway.

- BEMPEG in combination with NIVO showed anti-tumor activity in the efficacy-evaluable patients.

- The IFNg score is based on the statistical significance of the ranking of the genes found in the PD-L1+CD3+TIL and total FoxP3+ cells.

- PD-L1 expression and FoxP3+ cells were measured but showed negligible ORR difference, data not shown.

- Baseline tumor immune signatures associated with response to Bempegaldesleukin (NKTR-214) and Nivolumab

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**ORR of 48% in efficacy-evaluable population; in cisplatin-ineligible, 44%; ORR in refused SOC, 55%**

- BEMPEG plus NIVO in mUC was well tolerated and demonstrated promising clinical benefit.

- Low levels of baseline tumor-infiltrating lymphocytes (TILs) and T cell–inflammation is predictive of a poor response to checkpoint inhibitors.

- Current population included in the analyses.

**All efficacy evaluable melanoma (n=38) and mUC (n=27) in the BEMPEG dose expansion cohort**

- ECOG 0-1

- Cisplatin-eligible who refused SOC

- Liver metastases (n=10) 5 (50%)

- PD-L1 positive (n=21) 13 (62%)

- DCR (CR+PR+SD) 28 (74%)

**CONCLUSIONS**

- Exploratory biomarker analyses of PIVOT-02 baseline tumor biopsies identified immune signatures that enrich for response in patients with 1L MEL and 1L mUC.

- Baseline and 1L MEL and 1L mUC immune signatures were identified for response in patients with 1L MEL and 1L mUC.

- Idiopathic rates of ATLD were observed regardless of PD-L1 expression or unfavorable tumor microenvironments.

- BEMPEG in combination with NIVO showed anti-tumor activity in the efficacy-evaluable patients.