

# Analysis of Peritoneal Fluid

## Study Design Considerations

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Protein assays within Olink panels have been optimized for the dynamic range present in human plasma and serum. Results are reported as NPX™ units which are used to compare relative changes in protein abundance between study groups. Identification of true biological differences between study groups is facilitated by reducing technical variability to the fullest extent possible. This includes using the same collection procedure for each sample, keeping the same number of freeze/thaw cycles, and maintaining even storage conditions.

Within a study, all samples should be randomized across all plates and it is best to use a balanced number of samples across the study groups.

In addition to plasma and serum, strategies have been developed to analyze alternative types of samples. Peritoneal fluid is a serous fluid produced by the peritoneum. Ascites is a condition where peritoneal fluid collects within the abdomen around internal organs. Ascites is most often caused by liver cirrhosis, but it can also result from heart failure, pancreatitis, tuberculosis, and blockage of the hepatic vein. Peritoneal fluid is clear to pale yellow but can be milky/cloudy or bloody depending on the underlying disease condition.

Samples are normalized by volume or standardized to 1 mg/ml. To evaluate protein assays at risk for hook it is recommended to run a few samples from each sample condition at two additional dilutions. It is not necessary to include biological replicates or to add protease inhibitors. Technical replicates can be included for better estimation of CVs when using an alternative matrix. It is important to make note of the appearance of peritoneal fluid samples.

## Recommendations for Sample Preparation

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### Sample collection

- Peritoneal fluid should be collected using best practice clinical guidelines.
- Freshly collected samples are stable for a short duration at room temperature but should be stored on ice or at 4°C if possible.

*Note:* You may choose to include protease inhibitors to the samples. Roche cOmplete™ Mini Protease Inhibitor Cocktail (#11836153001) is recommended. A 10X solution can be prepared by dissolving 1 tablet in 1 ml of distilled water or PBS, or a 7X stock in 1.5 ml. The stock solution can be stored at 4°C for ≤2 weeks or -20°C for ≤12 weeks. Use a 1X final concentration of inhibitor cocktail and avoid excess final concentrations (e.g., 2X or 3X)

- Samples should be centrifuged for 10 min at ≥500 x g to remove cells and insoluble material.
- Aliquots should be stored at -80°C.

## Pre-Dilution Strategies

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### Target 96:

CAM	CRE	CVDII	CVDIII	DEV	IMO	INF	IRE	MET	NEU	NEX	ODA	ONCII	ONCIII
1:100	1:1	1:1	1:10	1:10	1:1	1:1	1:1	1:1	1:1	1:1	1:1	1:1	1:1

### Target 48:

1:1

*Note:* Dilutions are denoted as A:B, where A=number of sample units and B=total number of units after dilution, therefore 1:1 = undiluted or 'neat' sample.

## Publications using Olink

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Perricos A, Wenzl R, Husslein H, Eiwegger T, Gstoettner M, Weinhaeusel A, Beikircher G, Kuessel L. Does the use of the "Proseek® Multiplex Oncology I Panel" on peritoneal fluid allow a better insight in the pathophysiology of endometriosis, and in particular deep-infiltrating endometriosis? *J Clin Med.* 2020; 9(6):2009. DOI: 10.3390/jcm9062009. [Link](#)

Finkernagel F, Reinartz S, Schuldner M, Malz A, Jansen JM, Wagner U, Worzfeld T, Graumann J, von Strandmann EP, Müller R. Dual-platform affinity proteomics identifies links between the recurrence of ovarian carcinoma and proteins released into the tumor microenvironment. *Theranostics.* 2019; 9(22):6601-7. DOI: 10.7150/thno.37549. [Link](#)

Please contact [support@olink.com](mailto:support@olink.com) for further information on running alternative matrices.

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AM-20, v1.3