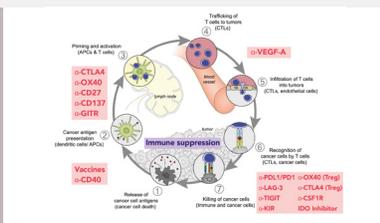


## Dear friends and Protagen Collaborators,

With 2018 ahead of us, it's time to reflect on some vivid changes. At the beginning of last year, we announced our expansion into immuno-oncology (IO) and collaboration agreements with world-leading cancer centers NCI (USA) and NCT (Germany). Cancer immunotherapies have the potential to cure cancer, making them the hottest topic in the industry today. However, the lack of adequate biomarkers restricts development, and there are increasing concerns about the frequency and severity of immune related adverse events (irAEs). Protagen can address these challenges and look forward to building a market-leading position in 2018.



### Immune related Adverse Event Prediction in IO



irAEs are an increasingly significant problem for immuno-therapies, in particular checkpoint inhibitors and/or combination therapies. In our collaborations with NCI and NCT we have found novel autoantibody markers that predict such irAEs. It is important that the risk of severe, sometimes even fatal irAEs, is assessed prior to and during therapy, e.g. colitis in melanoma patients. Here, we are expanding our network of high profile collaboration partners to utilize autoantibodies for addressing this issue.

### Conferences & Meet us @



Last quarter we attended **BioEurope** in Berlin, the annual meeting of the **SITC** in National Harbor and **ACR** in San Diego. At ACR, the largest scientific conference in autoimmune diseases, we gave a presentation of our work with Novartis Pharma, increasing our recognition in the field. Both SITC and ACR also had sessions on irAEs in IO, demonstrating the increasing importance of this area. This month, we will attend the JP Morgan Healthcare conference and look forward to meeting you!

### Corporate News & PR



In December we published our new immuno-oncology eBook "**The Power of Autoantibodies to Improve the Success of Cancer Immunotherapy**" and distributed it via DDNews. The eBook summarizes the challenges we face with current cancer immunotherapies and also provides some initial data we have obtained to date. We have also updated our **website** creating a newer, fresher look and feel. We look forward to welcoming you there and would certainly appreciate your feedback!

## Quartely Update

In 2017 we further expanded our NavigAID offering, which is now available in four autoimmune indications: SLE, SSc, RA and SjS, and thus covers four of the most important systemic autoimmune diseases. Yet the most important achievement this year has been

the confirmation that autoantibodies are an important biomarker class in immuno-oncology. The prediction of therapeutic response as well as irAE onset is possible, and seems to work both in melanoma and in so-called 'cold tumors' (e.g. prostate cancer). We have recently filed

IP in these indications and look forward to further validating these findings in other tumor indications, and with additional therapies. The expansion of our partner network will help us achieve this, and establish Protagen as an enabler of effective cancer immunotherapies.

## News

### New immune-oncology eBook: The Power of Autoantibodies to Improve the Success of Cancer Immunotherapy

This new eBook shares some of our cutting-edge data that shows why utilizing autoantibodies as biomarkers for predicting and monitoring immunotherapy response and irAE onset could be the key to unlocking safer, more effective treatments.

[READ MORE](#)

### New rheumatology paper: High diagnostic accuracy of histone H4-IgG autoantibodies in systemic lupus erythematosus

Together with our collaborators at the Heinrich-Heine-University in Dusseldorf, we published this peer-reviewed paper on a novel diagnostic autoantibody in systemic lupus erythematosus (SLE) in the journal Rheumatology

[READ MORE](#)

### Finally – Fireworks

Wishing you and yours a smashing 2018 from all of us at Protagen! For those of you into fireworks and planning to go big this year, we would like to mention that a Colorado crew built and detonated the heaviest firework ever. Their 1,201-pound behemoth contained as much explosive power as an entire fireworks show!

