Karolinska Institutet

KAROLINSKA UNIVERSITETSSJUKHUSET

Karolinska Comprehensive Cancer Center

Molecular Tumor Boards Current Practise, Future Needs

Jeffrey Yachnin

Center for Clinical Cancer Studies
Karolinska University Hospital

Karolinska Institutet | KAROLINSKA UNIVERSITETSSJUKHUSET

Karolinska Comprehensive Cancer Center

Oncology Molecular Tumor Boards at Karolinska

- *Weekly MTB within the Cancer Core Europe Consortium*
- *Our own MTB Q 2 weekly at Karolinska*
- *Nordic MTB Q monthly*

Karolinska Comprehensive Cancer Center

Label drug use

Off-label drug use

Matching to a clinical trial

Treatments to Avoid

Germline discovery

Changing diagnosis

Karolinska Institutet | KAROLINSKA UNIVERSITETSSJUKHUSET

Karolinska Comprehensive Cancer Center

4 essential questions to ask at an MTB

Is there good validity and robustness of the analytic method?

Is the variant pathogenic?

Is the variant actionable?

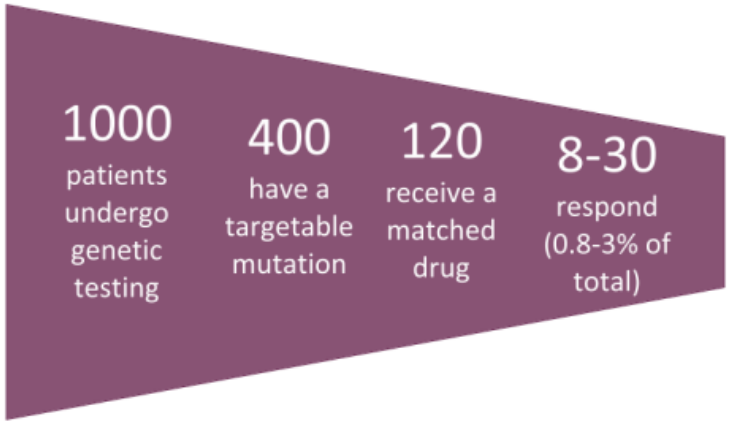
Is it clinically relevant?

How often is this approach successful?

HOWEVER: UNTIL NOW, NO CONVINCING BENEFIT FROM LARGE SCALE TUMOUR AGNOSTIC STUDIES

11 trials, including more than 13,000 patients

Various gene panels (including 49-87 genes) and tissue microarrays



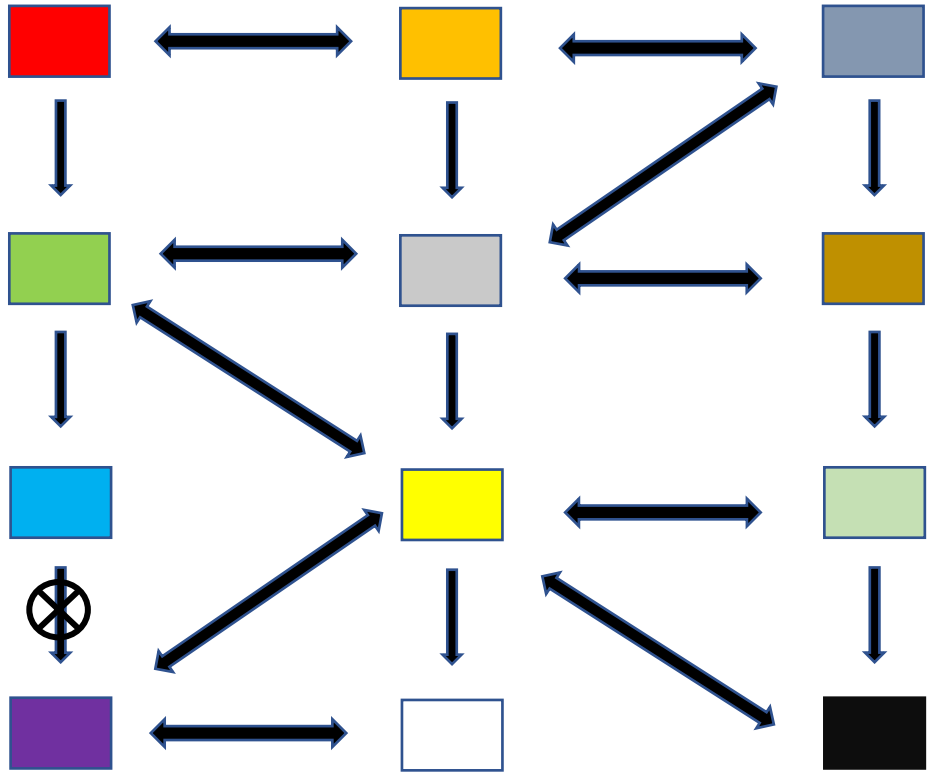
Tannock IF & Hickman JA, Ann Oncol 2019, 30(5): 661-663

oncology PRO
Educational Portal for Oncologists

ESMO

Some things to think about……

- *Do we know if our drug is reaching the target?*
- *What level of target engagement is required to see pharmacodynamic impact?*
- *Is the target a cancer driver?*
- *Are there other variants present that may impact our results?*



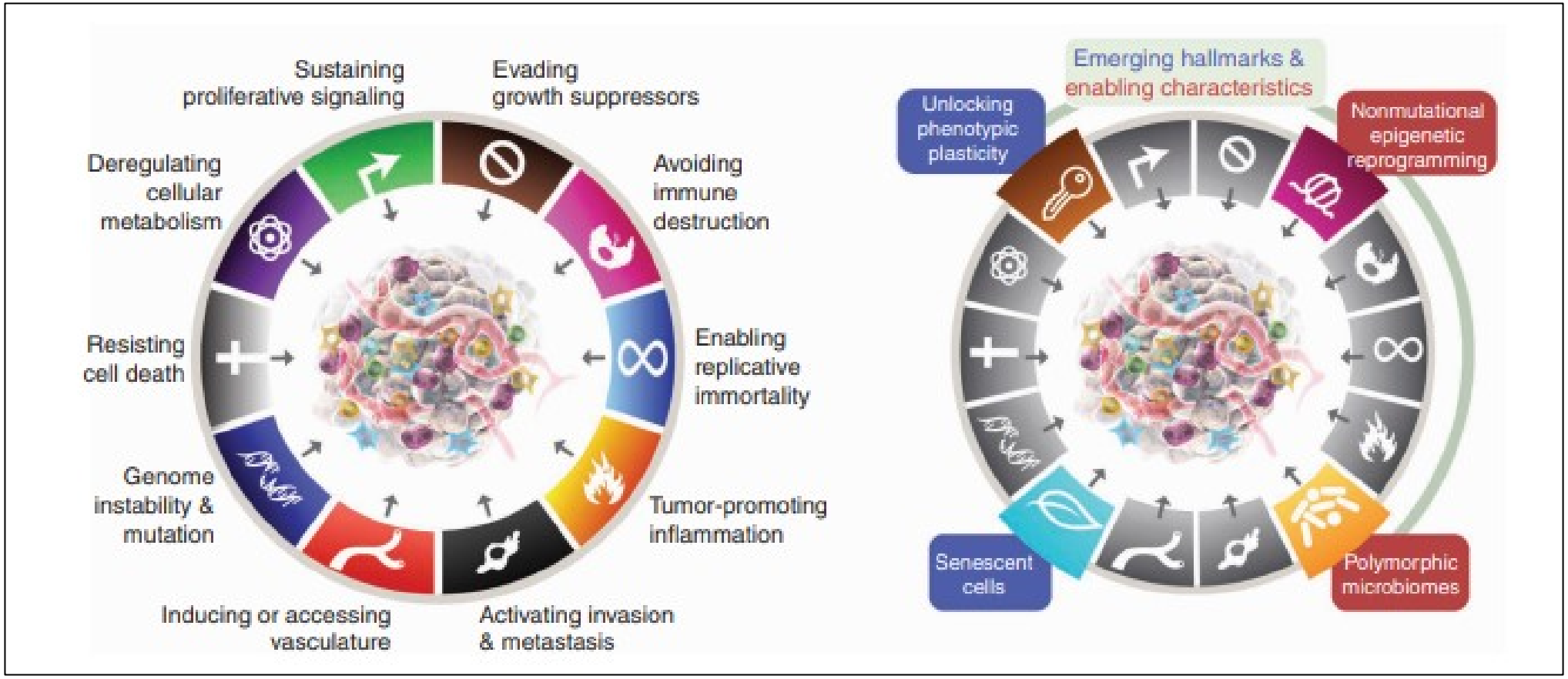
……if only it was so simple!

The future……?

not simply adding more layers of information

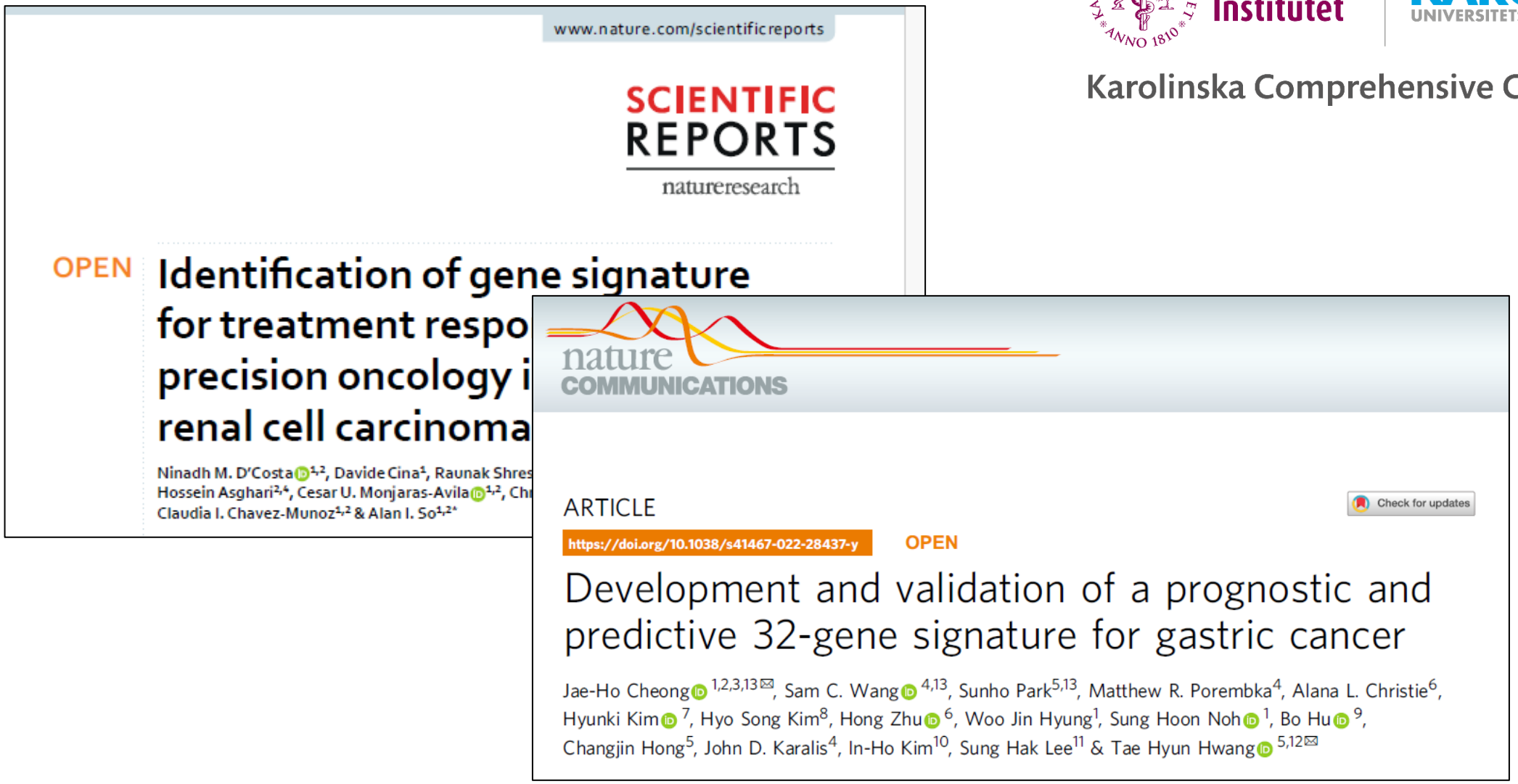
Karolinska Institutet | KAROLINSKA UNIVERSITETSSJUKHUSET

Karolinska Comprehensive Cancer Center



Karolinska Institutet | KAROLINSKA UNIVERSITETSSJUKHUSET

Karolinska Comprehensive Cancer Center



www.nature.com/scientificreports

SCIENTIFIC REPORTS

natureresearch

OPEN

Identification of gene signature for treatment respo precision oncology i renal cell carcinoma

Ninadh M. D'Costa[1,2], Davide Cina[1], Raunak Shres Hossein Asghari[3,4], Cesar U. Monjaras-Avila[1,2], Ch Claudia I. Chavez-Munoz[1,2] & Alan I. So[1,2*]

nature COMMUNICATIONS

ARTICLE

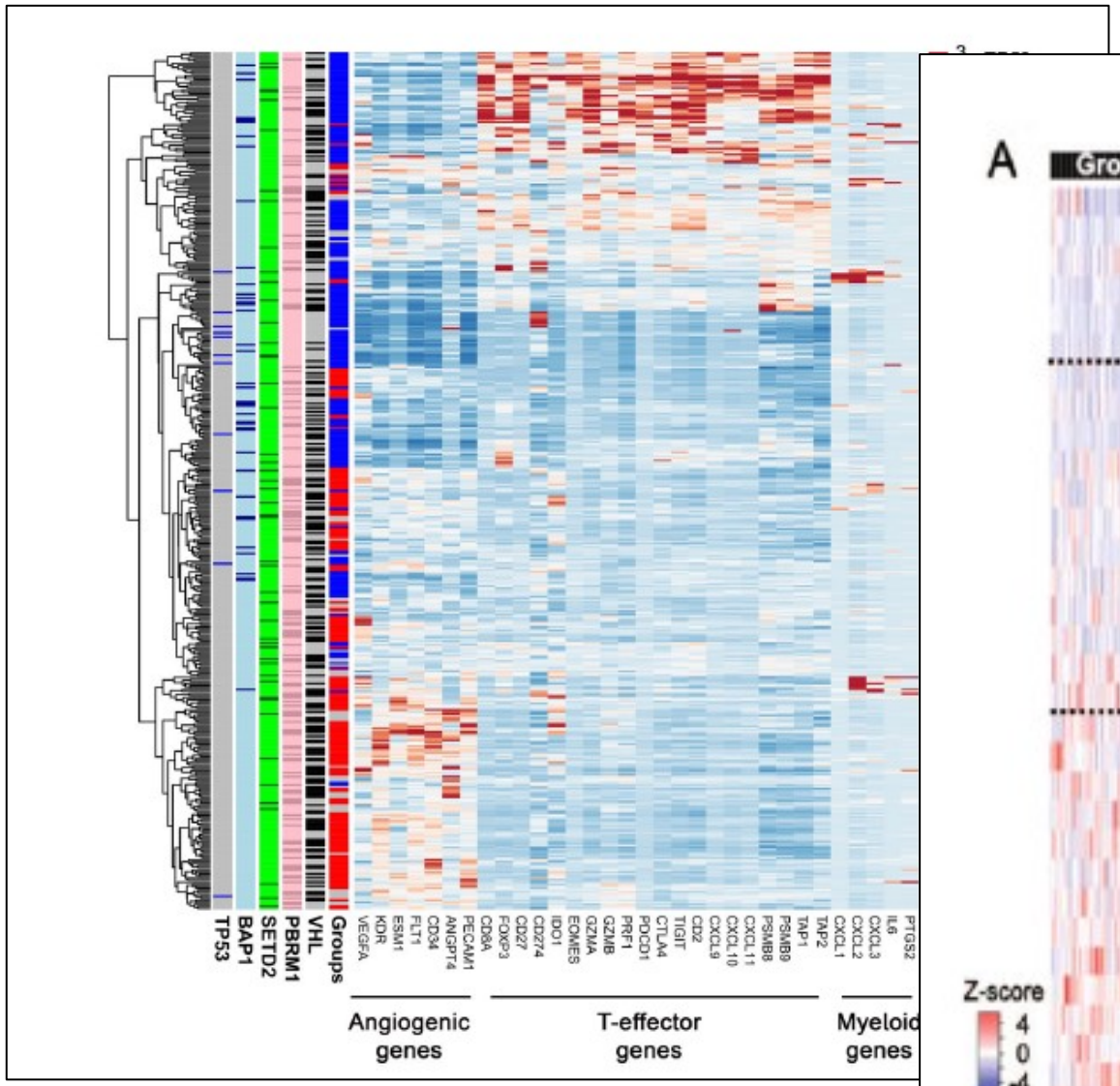
https://doi.org/10.1038/s41467-022-28437-y OPEN

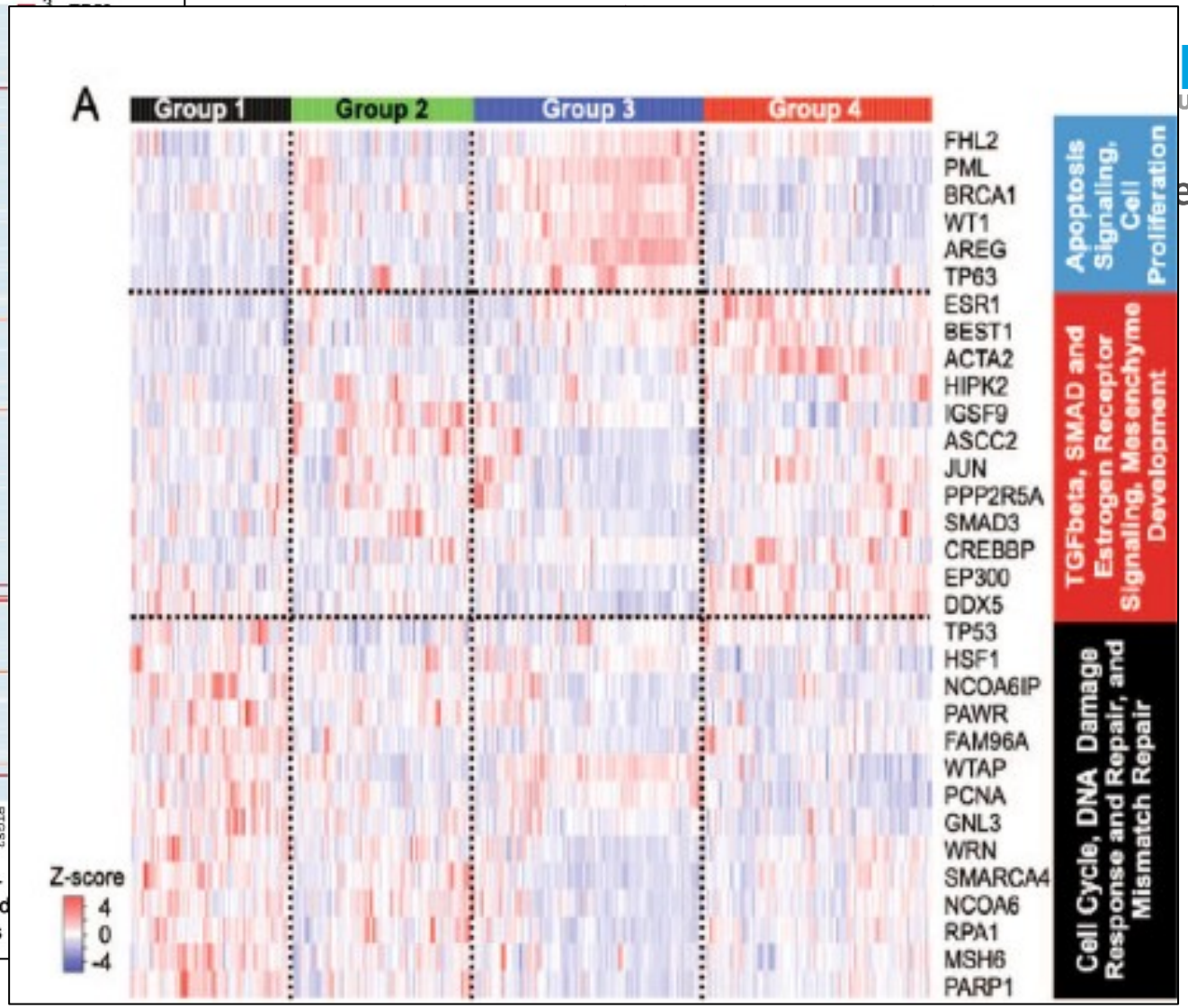
Check for updates

Development and validation of a prognostic and predictive 32-gene signature for gastric cancer

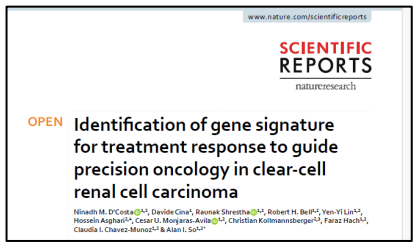
Jae-Ho Cheong[1,2,3,13✉], Sam C. Wang[4,13], Sunho Park[5,13], Matthew R. Porembka[4], Alana L. Christie[6], Hyunki Kim[7], Hyo Song Kim[8], Hong Zhu[6], Woo Jin Hyung[1], Sung Hoon Noh[1], Bo Hu[9], Changjin Hong[5], John D. Karalis[4], In-Ho Kim[10], Sung Hak Lee[11] & Tae Hyun Hwang[5,12✉]

Nature Commun 2022





NSKA
USET
er Center


www.nature.com/scientificreports

SCIENTIFIC REPORTS
nature research

OPEN Identification of gene signature for treatment response to guide precision oncology in clear-cell renal cell carcinoma

nature COMMUNICATIONS

ARTICLE

OPEN

Development and validation of a prognostic and predictive 32-gene signature for gastric cancer

Karolinska Institutet | KAROLINSKA UNIVERSITETSSJUKHUSET

Karolinska Comprehensive Cancer Center

The future……? A better understanding of molecular tumor biology!

Combination therapies in an n-of-one approach

Dynamic molecular biomarker analysis

Karolinska Institutet

KAROLINSKA UNIVERSITETSSJUKHUSET

Karolinska Comprehensive Cancer Center

Thanks for your attention