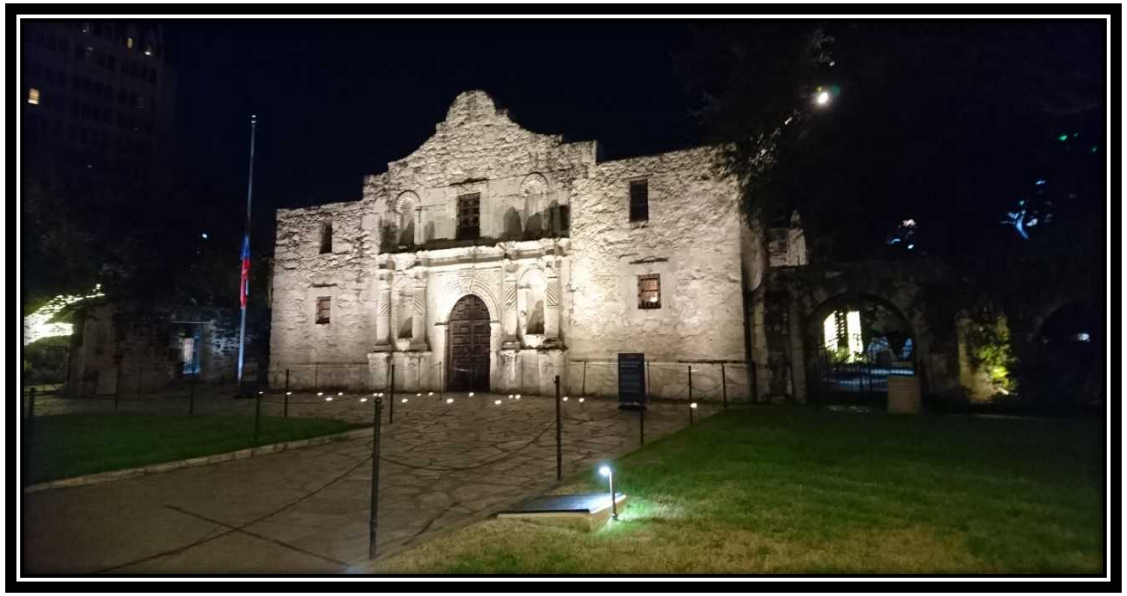


SABCS 2018 Patologi

Anna Ehinger

Patologi i SABCS

Ki-67

HER2

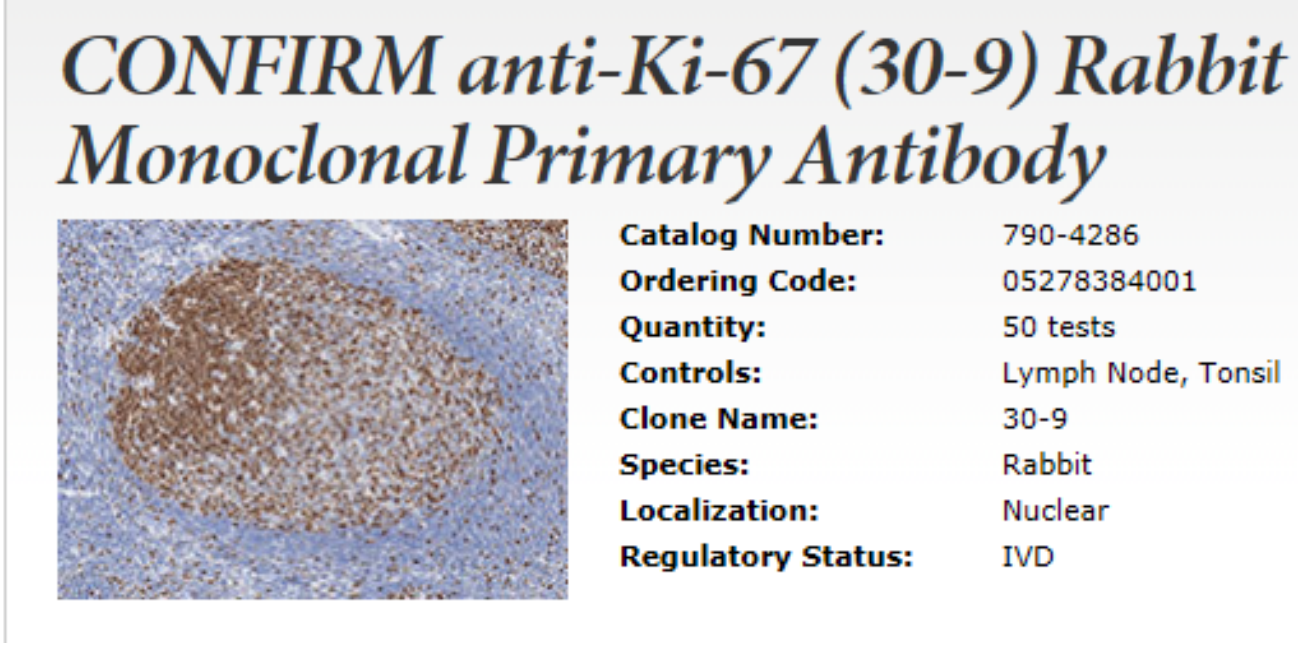
PD-L1

Digital patologi

TILs

Ki-67 (30-9) scoring and differentiation in Luminal A and Luminal B breast cancer subtypes

Viale G, Hanlon Newell AE, Walker E, Bai I, Russo L, Dell'Orto P, **Maisonneuve P**.
European Institute of Oncology, Milan, Italy; University of Milan, School of Medicine, Milan, Italy; Ventana Medical Systems, Inc., Tucson, AZ; European Institute o Oncology, Milan, Italy



Ki-67 (30-9) scoring and differentiation in Luminal A and Luminal B breast cancer subtypes

Viale G, Hanlon Newell AE, Walker E, Bai I, Russo L, Dell'Orto P, **Maisonneuve P**.
European Institute of Oncology, Milan, Italy; University of Milan, School of Medicine, Milan, Italy; Ventana Medical Systems, Inc., Tucson, AZ; European Institute o Oncology, Milan, Italy

-Kohort ca 700 patienter opererade 1998-2002 med lång uppföljningstid

-Lum A-lik: ER+/HER2- och låg Ki67 < 14% eller intermediär Ki67 med PgR $\geq$ 20%

-Lum B-lik: ER+/HER2- och hög Ki67 $\geq$ 20% eller intermediär Ki67 med PgR < 20%

-Ca 60% Lum A-lik och 40% Lum B-lik

-Multivariat analys visade ökad risk för händelse I Lum B-lik jämfört med Lum A-lik
(H.R. 1.97; 95% CI 1.38-2.79)

Analytical validation of an automated digital scoring protocol for Ki67: International multicenter collaboration study

Acs B, Leung SC, Pelekanou V, Bai Y, Martinez-Morilla S, Toki M, Chang MC, Gholap A, Jadhav A, Hugh JC, Bigras G, Laurinavicius A, Augulis R, Levenson R, Todd A, Piper T, Virk S, van der Vegt B, Hayes DF, Dowsett M, Nielsen TO, Rimm DL.

Yale School of Medicine, New Haven, CT; Karolinska Institute, Stockholm, Sweden; University of British Columbia, Vancouver, BC, Canada; Sinai Health System and University of Toronto, Toronto, ON, Canada; Optra Technologies, NeoPro SEZ, BlueRidge, Hinjewadi, India; University of Alberta, Edmonton, AB, Canada; Vilnius University Faculty of Medicine and National Center of Pathology, Vilnius University Hospital Santaros Clinics, Vilnius, Lithuania; University of California Davis Medical Center, Sacramento, CA; Biomarkers & Companion Diagnostics Group, Edinburgh Cancer Research Centre, Edinburgh, United Kingdom; Queen's University, Kingston, ON, Canada; University of Groningen, University Medical Center Groningen, Groningen, Netherlands; University of Michigan Comprehensive Cancer Center, Ann Arbor, MI; Institute of Cancer Research, London, United Kingdom.

Analytical validation of an automated digital scoring protocol for Ki67: International multicenter collaboration study Acs B, et al

Test av 3 platformer av digital analys (HALO, QuantCenter, **QuPath**)

10 lab av Internationell Ki67 bröstcancer arbetsgrupp IKWG

TMA, 149 ER+ tumörer, Spectrum Webscope vävnads segmentation som “sanning”

Mycket bra intra- och interplattform reproducibilitet

Analytical validation of an automated digital scoring protocol for Ki67: International multicenter collaboration study Acs B, et al

QuPath lägst intra-DIA variabilitet och **Open Source** mjukvara

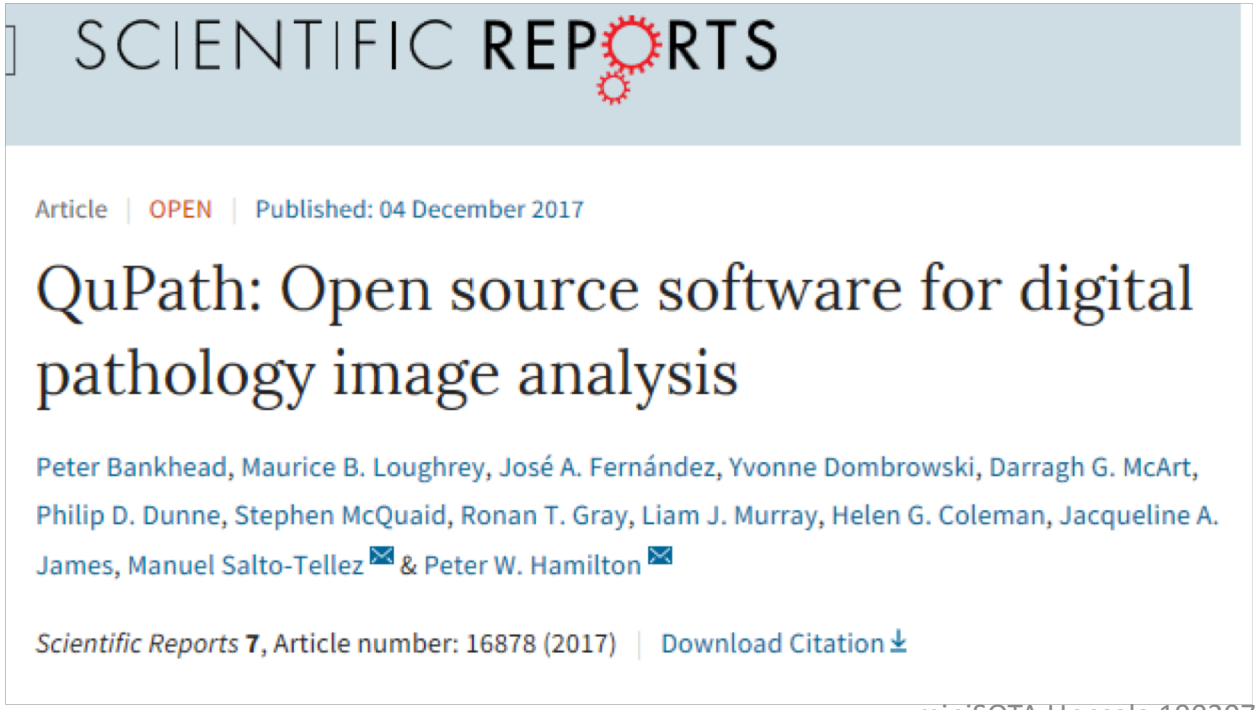
QuPath användes till att testa Interlaboratory reproducibilitet

QuPath uppfyllde alla pre-determinerade framgångskriterier

En studie om den kliniska andvändbarhet av Ki67 avläsning med QuPath är planerat

QuPath

https://qupath.github.io/



SCIENTIFIC REPORTS

Article | OPEN | Published: 04 December 2017

QuPath: Open source software for digital pathology image analysis

Peter Bankhead, Maurice B. Loughrey, José A. Fernández, Yvonne Dombrowski, Darragh G. McArt, Philip D. Dunne, Stephen McQuaid, Ronan T. Gray, Liam J. Murray, Helen G. Coleman, Jacqueline A. James, Manuel Salto-Tellez & Peter W. Hamilton

Scientific Reports **7**, Article number: 16878 (2017) | Download Citation

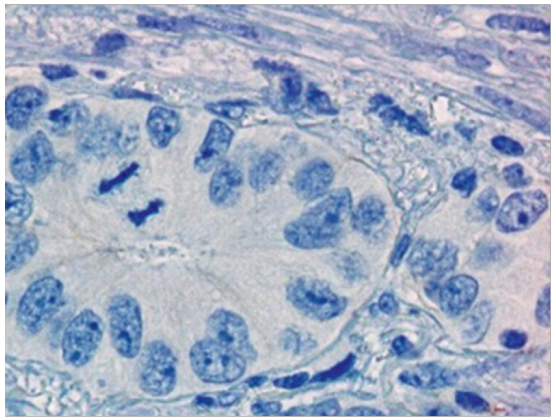
VOLUME 36 · NUMBER 20 · JULY 10, 2018

JOURNAL OF CLINICAL ONCOLOGY

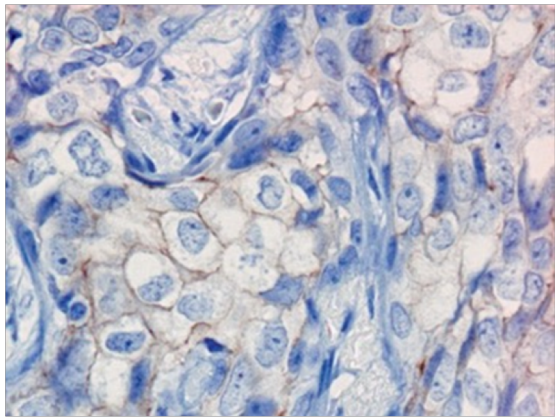
ASCO SPECIAL ARTICLE

Human Epidermal Growth Factor Receptor 2 Testing in Breast Cancer: American Society of Clinical Oncology/ College of American Pathologists Clinical Practice Guideline Focused Update

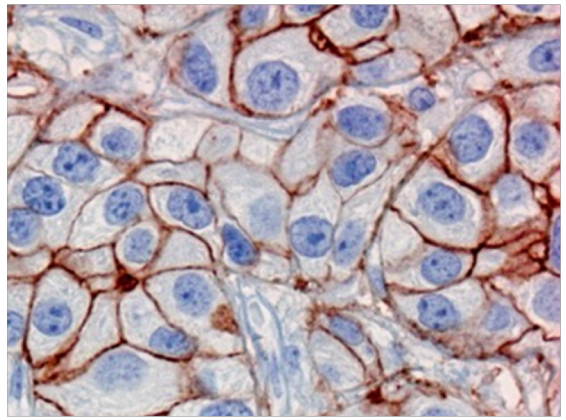
Antonio C. Wolff, M. Elizabeth Hale Hammond, Kimberly H. Allison, Brittany E. Harvey, Pamela B. Mangu, John M.S. Bartlett, Michael Bilous, Ian O. Ellis, Patrick Fitzgibbons, Wedad Hanna, Robert B. Jenkins, Michael F. Press, Patricia A. Spears, Gail H. Vance, Giuseppe Viale, Lisa M. McShane, and Mitchell Dowsett



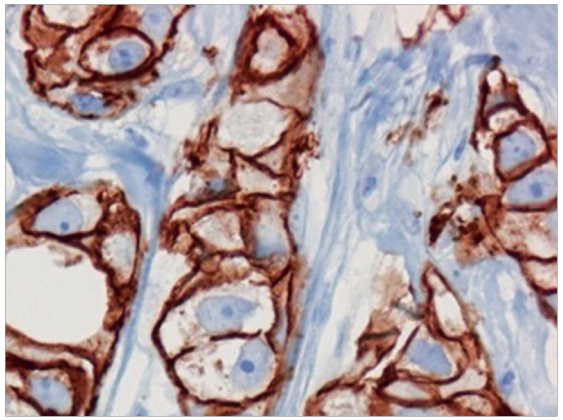
score 0, negativ



score 1+, negativ



score 2+, ????



score 3+, positiv

VOLUME 36 · NUMBER 20 · JULY 10, 2018

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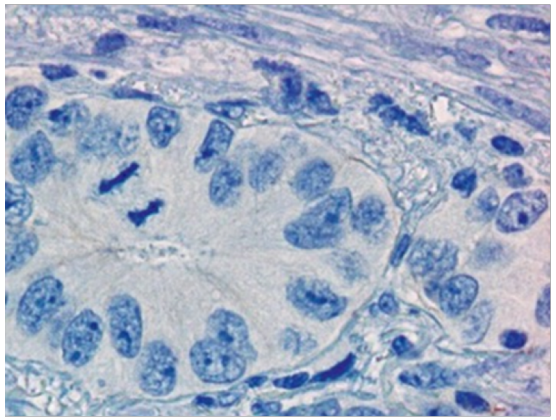
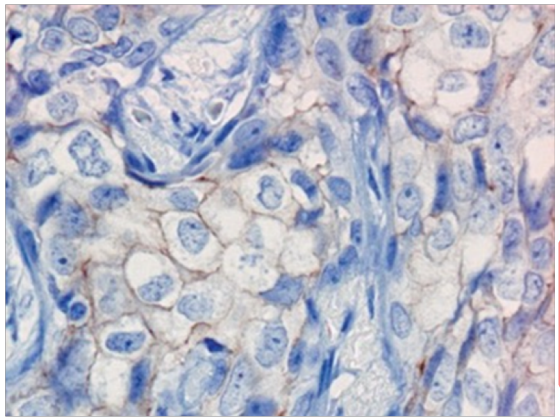
ASCO SPECIAL ARTICLE

Human Epidermal Growth Factor Receptor 2 Testing in Breast Cancer: American Society of Clinical Oncology/ College of American Pathologists Clinical Practice Guideline Focused Update

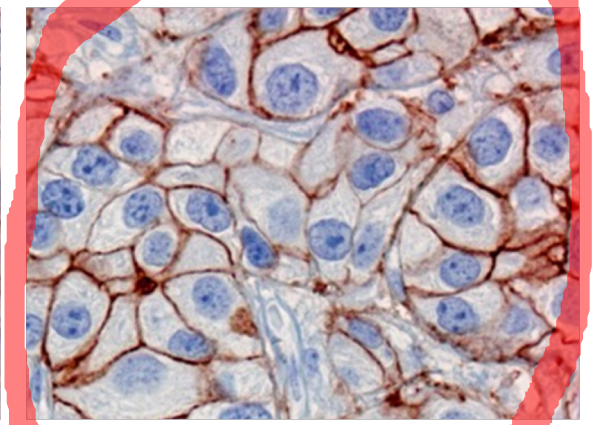
Antonio C. Wolff, M. Elizabeth Hale Hammond, Kimberly H. Allison, Brittany E. Harvey, Pamela B. Mangu, John M.S. Bartlett, Michael Bilous, Ian O. Ellis, Patrick Fitzgibbons, Wedad Hanna, Robert B. Jenkins, Michael F. Press, Patricia A. Spears, Gail H. Vance, Giuseppe Viale, Lisa M. McShane, and Mitchell Dowsett



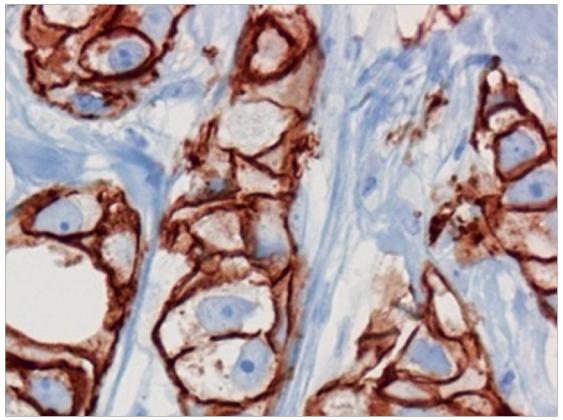
score 0, negativ



score 1+, negativ



score 2+, ???

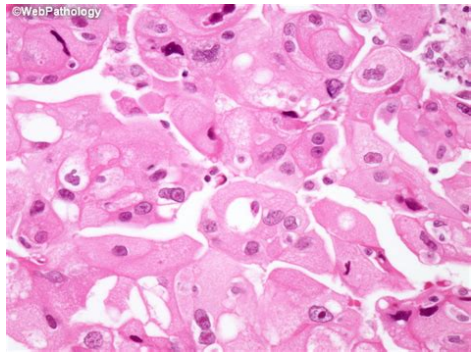


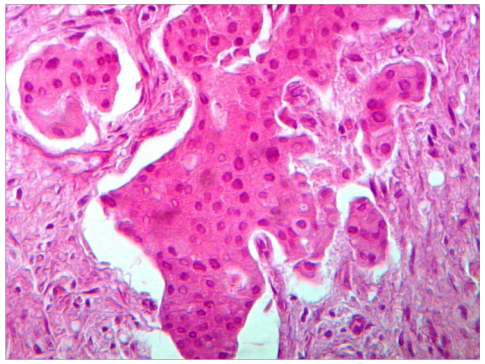
score 3+, positiv

Apocrine morphology and LAR molecular subtype predict prognosis of TNBC patients with residual disease after neoadjuvant chemotherapy

Masuda H, Miura S, Harano K, Wang Y, Hirota Y, Matsunaga Y, Lim B, Lucci A, Parinyanitikul N, Lee HJ, Gong G, Rao A, Seitz RS, Morris SW, Hout DR, Nakamura S, Tripathy D, Harada O, Krishnamurthy S, Ueno NT. Showa

University, Tokyo, Japan; National Cancer Center Hospital East, Chiba, Japan; The University of Texas MD Anderson Cancer Center, Houston; Chulalongkorn University, Bangkok, Thailand; University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea; Insight Genetics, Inc.,, Nashville, TN; Kameda General Hospital, Kamogawa, Japan.

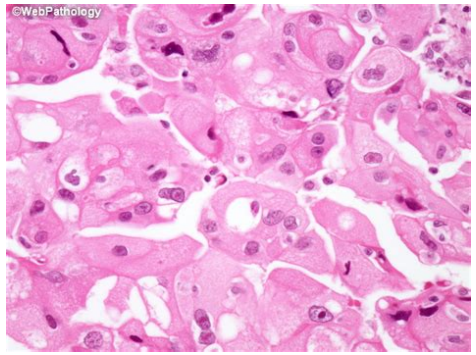


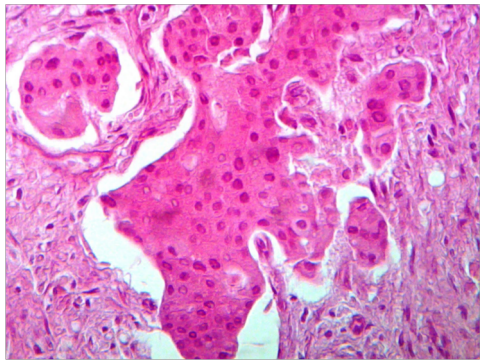


Apocrine morphology and LAR molecular subtype predict prognosis of TNBC patients with residual disease after neoadjuvant chemotherapy

Ca 50% av TNBC med apokrin diff är LAR. Ca 70% av LAR har apokrin diff.

TNBC (Luminal Androgen Receptor-LAR) med Apokrin differentiering och ej-pCR efter neoadjuvant behandling hade bättre prognos.





Impact of the 2018 ASCO/CAP HER2 focused update on human epidermal growth factor receptor-2 (HER2) testing in breast cancer: A retrospective review of a single institutional cohort

Hicks DG, D'Aguiar M, Henry J, McMahon L, Buscaglia B, Turner B. University of Rochester Medical Center, Rochester, NY.

2281 HER2 FISH analyses

Guidelines 2013
25 HER2 positive (monosomy)
199 HER2 2+ equivocal
14,77% HER2 positiva (337 fall)

Guidelines 2018
25 HER2 negativa
198 HER2 negative och 1 HER2 positive
13,72% HER2 positiva (313 fall)

Mer studier om den kliniska betydelse behövs

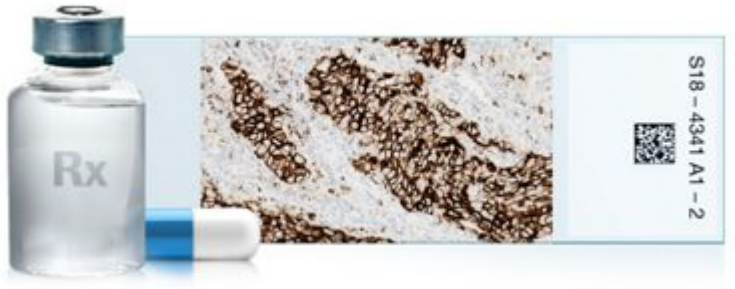
IMpassion 130

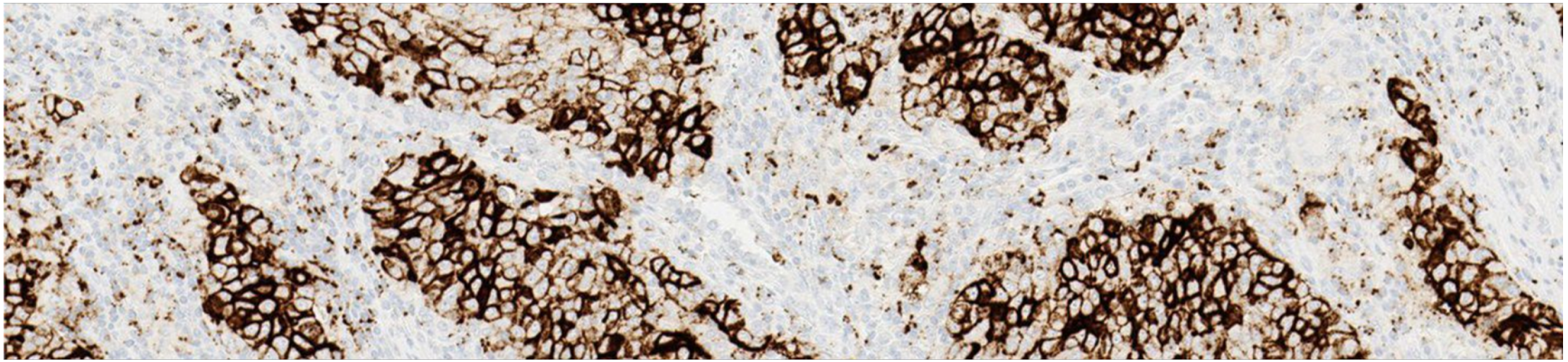
Dubbel-blind studie som har visat att patienter med metastaserande TNBC PD-L1+ gynnas av kombinationen nabPaclitaxel och atezolizumab (Tecentriq).

Median OS för var 25 mån för PD-L1+ patienter som fick nabPx+atezolizumab jämfört med 15.5 mån för de som fick nabPx+Placebo

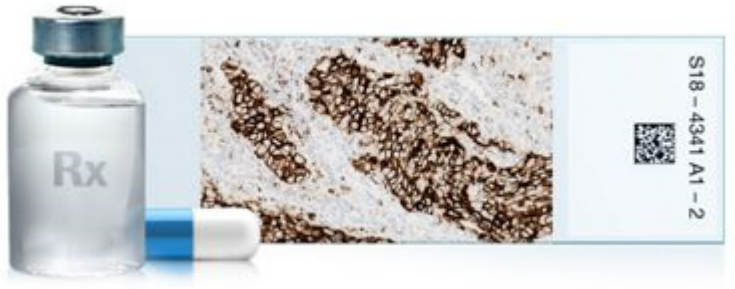
Progression free survival PFS var 7,5 mån respective 5mån.

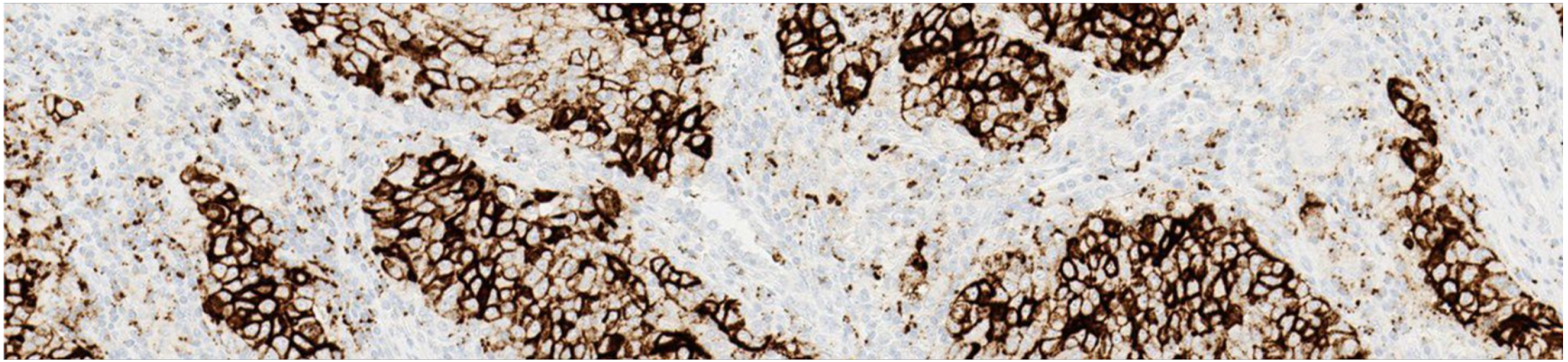
VENTANA PD-L1 (SP142) Assay





VENTANA PD-L1 (SP142) Assay





Pre-therapeutic PD-L1 expression and dynamics of Ki-67 and gene expression during neoadjuvant immune-checkpoint blockade and chemotherapy to predict response within the GeparNuevo trial

Sinn BV, Loibl S, Karn T, Untch M, Kunze CA, Weber KE, Treue D, Wagner K, Hanusch CA, Klauschen F, Fasching PA, Huober J, Zahm D-M, Jackisch C, Thomalla J, Blohmer J-U, van Mackelenbergh M, Rhiem K, Felder B, von Minckwitz G, Burchardi N, Schneeweiss A, **Denkert C.**

Institut für Pathologie, Charité-Universitätsmedizin, Berlin, Germany; German Breast Group, Neu-Isenburg, Germany; Klinik für Frauenheilkunde und Geburtshilfe, Universitätsklinikum, Frankfurt, Germany; HELIOS Klinikum, Berlin-Buch, Germany; Pathologie am Rotkreuzklinikum, München, Germany; Klinikum zum Roten Kreuz, München, Germany; Brustzentrum, Universitätsklinikum, Erlangen, Germany; Universitätsfrauenklink, Brustzentrum, Ulm, Germany; SRH Wald-Klinikum, Gera, Germany; Sana Klinikum, Offenbach, Germany; Praxisklinik für Haematologie und Onkologie, Koblenz, Germany; Brustzentrum, Charité-Universitätsmedizin, Berlin, Germany; Klinik für Gynäkologie und Geburtshilfe, Universitätsklinikum, Kiel, Germany; Zentrum Familiärer Brust- und Eierstockkrebs, Universitätsklinikum, Köln, Germany; Nationales Centrum für Tumorerkrankungen, Heidelberg, Germany

GeparNuevo: Anti PD-L1 durvalumab ökar fall av pCR bland TNBC som har fått de in a “window of opportunity” 2v före neoadjuvant behandling med taxaner/antracykliner.

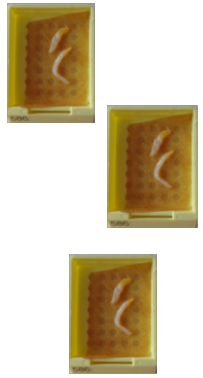
GeparNuevo

Randomiserad fas II neoadjuvant studie.

Anti-PD-L1 durvalumab+Kemo vs durvalumab+placebo

Tre biopsitillfälle:

A- före behandling
B- efter“Window” period
C- efter 12 v nabPaclitaxel



GeparNuevo

I biopsierna pre-behandling testades SP263

PD-L1 avlästes I tumörcellerna och I TILs.

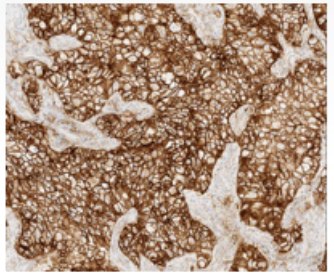
PD-L1 + om ≥ 25% positivitet I cancerceller och TILs.

Ki-67

PD-L1 I TILs var predictive

Hög Ki67 I biopsi efter “window” period var prediktiv I alla

VENTANA PD-L1 (SP263) Rabbit Monoclonal Primary Antibody



Catalog Number:	790-4905
Ordering Code:	07494190001
Quantity:	50 tests
Controls:	Placenta
Clone Name:	SP263
Species:	Rabbit
Localization:	Membranous and/or Cytoplasmic Staining
Regulatory Status:	IVD, CE-IVD

VENTANA PD-L1 (SP263) Rabbit Monoclonal Primary Antibody is intended for laboratory use in the detection of the PD-L1 protein in formalin-fixed, paraffin-embedded tissue. It is intended to be stained with BenchMark IHC/ISH instruments. It is indicated as an aid in the assessment of PD-L1 expression in human tissues.

This product should be interpreted by a qualified pathologist in conjunction with histological examination, relevant clinical information, and proper controls.

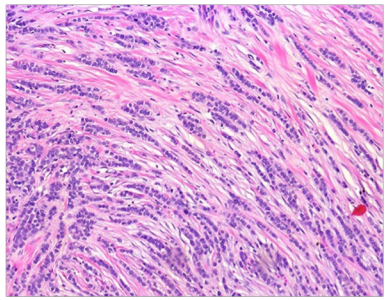
This antibody is intended for *in vitro* diagnostic (IVD) use.

Tumor-infiltrating lymphocytes in invasive lobular breast cancer identify a poor prognostic sub-group

Tille J-C, Saint Martin C, Fuhrmann L, De Koning L, Reyal F, Piccart M, Kirova Y, Cottu P, Carton M, Vincent Salomon A.

University Hospital Geneva, Geneva, Switzerland; PSL Research University, Saint-Cloud, France; Institut Curie, Paris, France; Insitut Jules Bordet, Bruxelles, Belgium.

Lobulär cancer med TILs, sämre prognos, större tumörer, ofta N+ och HER2+, Kärnatypi grad 3.



Patologi i SABCS

Ki-67 kan skilja på Lum A och Lum B like

Digital patologi kan lösa problemet med reproducerbarhet av Ki 67 avläsning

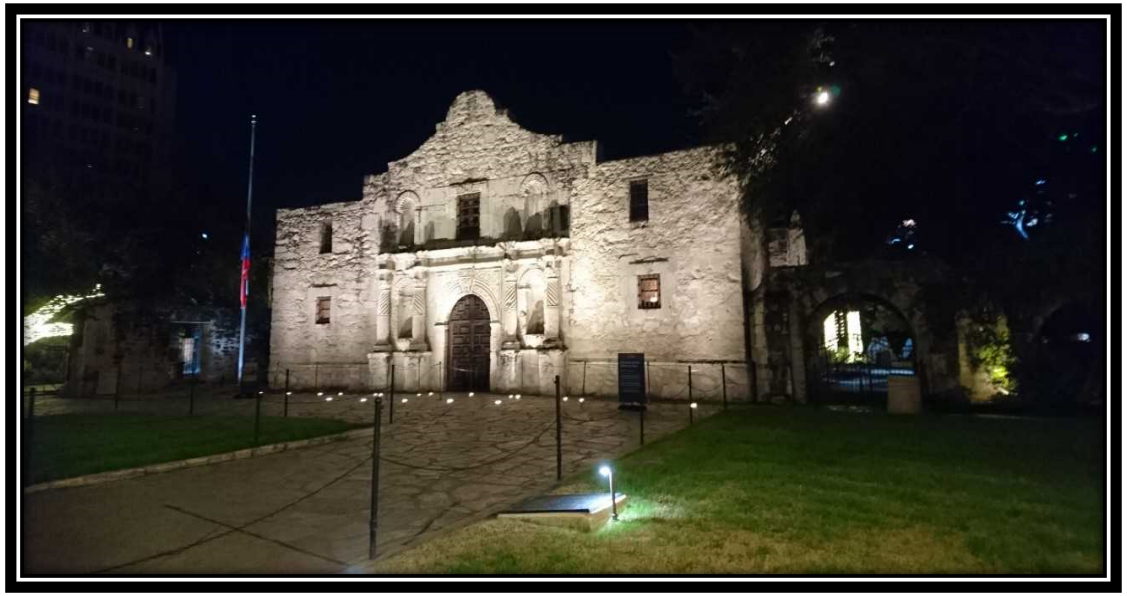
HER2 nya ASCO/CAP guidelines 2013 vs 2018, “equivocal” blir HER2- och 1% HER2+ klassas nu som HER2-

TNBC, LAR och apokrin diff har bättre prognos.

PD-L1 I TNBC. Impasse visar bättre överlevnad I mTNBC PD-L1+ (atezolizumab, Lab test SP142)

PD-L1+ TILs är prediktiv av pCR I neoadjuvant behandling (durvalumab, Lab test SP263)

TILs I lobular cancer, en särskild aggressiv subgrupp



Tack!