Personalised Cancer Medicine Flashcards 2022







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Personalised Cancer Medicine Flashcards 2022

Lung Cancer

Breast Cancer

Colorectal Cancer

Gastric Cancer

Melanoma

Ovarian Cancer

Prostate Cancer

Pancreatic Cancer

GIST





Personalised Cancer Medicine Flashcards 2022 Lung Cancer





Standard

EGFR ALK ROS1 PDL-1 RET



Recommended

NTRK*
KRAS y MET*
BRAF V600
NGS**



^{**}in biopsies with little sample; Approved in the USA as accompanying diagnosis of EGFR and ALK inhibitors

The **Standard** category is based on current treatment indications with approved funding by the Spanish National Health System. The **Recommended** category is based on current recommendations by EMEA and FDA.

- 1. Garrido P, Conde E, de Castro J, et al. Updated guidelines for predictive biomarker testing in advanced non-small-cell lung cancer: a National Consensus of the Spanish Society of Pathology and the Spanish Society of Medical Oncology. Clin Transl Oncol. 2020 Jul;22(7):989-1003. doi: 10.1007/s12094-019-02218-4.
- 2. Colomer R, Mondejar R, Romero-Laorden N et al., When should we order a next generation sequencing test in a patient with cancer? EClinicalMedicine. 2020 Jul 31;25:100487. doi: 10.1016/j.eclinm.2020.100487..
- 3. Mosele F, Remon J, Mateo J, et al. Recommendations for the use of next-generation sequencing (NGS) for patients with metastatic cancers: a report from the ESMO Precision Medicine Working Group. Ann Oncol. 2020 Nov;31(11):1491-1505. doi: 10.1016/j.annonc.2020.07.014...
- 4. https://www.accessdata.fda.gov/cdrh_docs/pdf17/P170019S006A.pdf



Currently not recommended

HER2 NRG1





Personalised Cancer Medicine Flashcards 2022 Breast Cancer





Standard

Estrogen Receptor Progesterone Receptor

HER2

Genetic platforms: Mammaprint, Oncotype, Prosigna, or Endopredict* BRCA 1 and BRCA 2**

PDL-1***

PIK3CA****



Recommended

NGS****

***** Approved in US as companion diagnostics of a PI3K inhibitor



ESR1

FGFR1

AKT1

PTEN

Liquid biopsy and circulating cancer cells

- 1. Colomer R, Aranda-López I, Albanell J, García-Caballero T, Ciruelos E, López-García MÁ, Cortés J, Rojo F, Martín M, Palacios-Calvo J. Biomarkers in breast cancer: A consensus statement by the Spanish Society of Medical Oncology and the Spanish Society of Pathology. Clin Transl Oncol. 2018 Jul;20(7):815-826. doi: 10.1007/s12094-017-1800-5.
- 2. Litton JK, Burstein HJ, Turner NC. Molecular Testing in Breast Cancer. Am Soc Clin Oncol Educ Book. 2019 Jan;39:e1-e7. doi: 10.1200/EDBK_237715.
- 3. https://www.accessdata.fda.gov/cdrh_docs/pdf17/P170019S006A.pdf



^{*}in early luminal breast cancer with high risk of relapsing
**in advanced triple negative or luminal breast cancer

^{***} in advanced triple negative breast cancer

^{****} in advanced luminal breast cancer



Personalised Cancer Medicine Flashcards 2022 Colorectal Cancer





Standard

Microsatellite Instability study* KRAS, NRAS BRAF DPD

* by IHC (MLH1, PMS2, MSH2 and MSH6) or genetic study (BAT25 and BAT26, D2S123, D5S346 and D17S250).



Recommended

NTRK** HER2***

** in tumors with microsatellite instability, MIG1 hypermetilation and RAS wild type (IHQ + FISH, NGS, RT-PCR, NanoString)

***(IHC or FISH or NGS) en RAS y BRAF WT



Currently not recommended

Inmunoscore CMS classification

MET

EGFR

FGFR

PI3K

- 1. García-Alfonso P, García-Carbonero R, García-Foncillas J, et al. Update of the recommendations for the determination of biomarkers in colorectal carcinoma: National Consensus of the Spanish Society of Medical Oncology and the Spanish Society of Pathology. Clin Transl Oncol. 2020 Nov;22(11):1976-1991. doi: 10.1007/s12094-020-02357-z.
- 2. Kolenčík D, Shishido SN, Pitule P, et al. Liquid Biopsy in Colorectal Carcinoma: Clinical Applications and Challenges. Cancers (Basel). 2020 May 27;12(6):1376. doi: 10.3390/cancers12061376.
- 3. Garrido P, Hladun R, de Álava E, et al. Multidisciplinary consensus on optimising the detection of NTRK gene alterations in tumours. Clin Transl Oncol. 2021 Feb 23. doi: 10.1007/s12094-021-02558-0





Personalised Cancer Medicine Flashcards 2022 **Gastric Cancer**





Standard

HER2



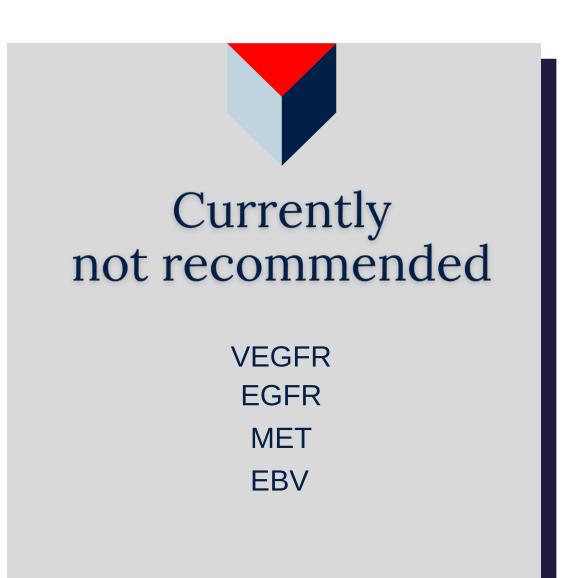
Recommended

Microsatellite Instability* PDL-1

Genomic studies (BAT25 and BAT26, D2S123, D5S346 and D17S250).

*by either IHQ (MLH1, PMS2, MSH2 and MSH6) or by

- Gómez-Martín C, Concha A, Corominas JM, et al; Spanish Society of Medical Oncology; Spanish Society of Pathology. Consensus of the Spanish Society of Medical Oncology (SEOM) and Spanish Society of Pathology (SEAP) for HER2 testing in gastric carcinoma. Clin Transl Oncol. 2011 Sep;13(9):636-51. doi: 10.1007/s12094-011-0709-7.
- Shitara K, Van Cutsem E, Bang YJ, et al. Efficacy and Safety of Pembrolizumab or Pembrolizumab Plus Chemotherapy vs Chemotherapy Alone for Patients With First-line, Advanced Gastric Cancer: The KEYNOTE-062 Phase 3 Randomized Clinical Trial. JAMA Oncol. 2020 Oct 1;6(10):1571-1580. doi: 10.1001/jamaoncol.2020.3370.





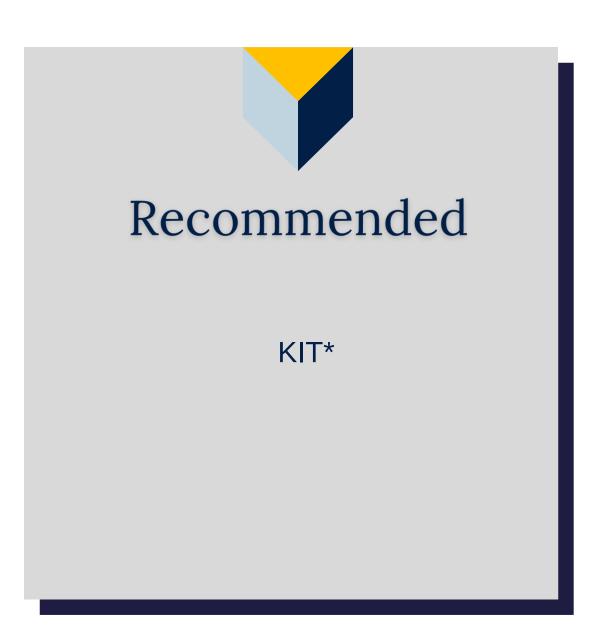


Personalised Cancer Medicine Flashcards 2022 Melanoma





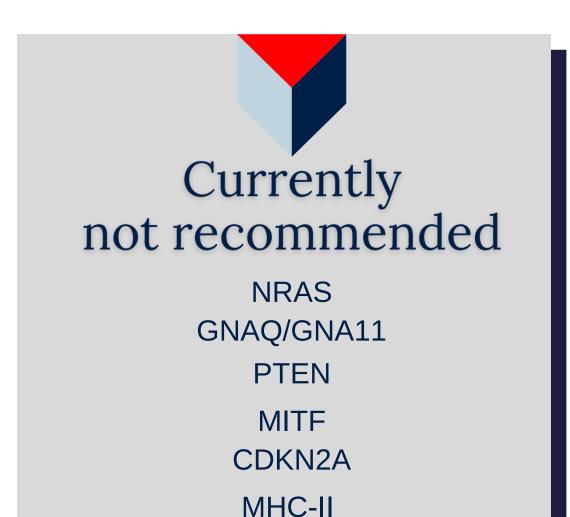
BRAF





The **Standard** category is based on current treatment indications with approved funding by the Spanish National Health System. The **Recommended** category is based on current recommendations by EMEA and FDA.

- 1. Martín-Algarra S, Fernández-Figueras MT, López-Martín JA, at al; Spanish Society of Pathology; Spanish Society of Medical Oncology. Guidelines for biomarker testing in metastatic melanoma: a National Consensus of the Spanish Society of Pathology and the Spanish Society of Medical Oncology. Clin Transl Oncol. 2014 Apr;16(4):362-73. doi: 10.1007/s12094-013-1090-5
- 2. Scherrer E, Rau R, Lorenzi M, Shui I, Townson S, Larkin J. Systematic literature review for the association of biomarkers with efficacy of anti-PD-1 inhibitors in advanced melanoma. Future Oncol. 2021 Mar 30. doi: 10.2217/fon-2021-0154...
- 3. Mao L, Dai J, Cao Y, et al. Palbociclib in advanced acral melanoma with genetic aberrations in the cyclin-dependent kinase 4 pathway. Eur J Cancer. 2021 Mar 23;148:297-306. doi: 10.1016/j.ejca.2021.02.021.



Tumor mutational burden





Personalised Cancer Medicine Flashcards 2022 Ovarian Cancer





Standard

BRCA1 and BRCA2*
Homologous Recombination
Deficiency (HRD)

*germ-line or somatic



Recommended

NGS**





p53, PD-1/PDL-1, ATM, BARD1, BRIP1, CHECK1,

CHECK2, FAM175A, MRE11A, NBN, PALB2, RAD51C, RAR51D.







Personalised Cancer Medicine Flashcards 2022 o **Prostate Cancer**





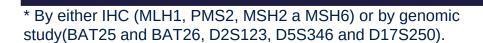
Standard

BRCA1 and **BRCA2***



Recommended

Microsatellite instability* HRR Profound panel * (somatic)



*germ-line or somatic

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- de Bono J, Mateo J, Fizazi K, et al. Olaparib for Metastatic Castration-Resistant Prostate Cancer. N Engl J Med. 2020 May 28;382(22):2091-2102. doi: 10.1056/NEJMoa1911440.
- 2. To SQ, Kwan EM, Fettke HC, et al. Expression of Androgen Receptor Splice Variant 7 or 9 in Whole Blood Does Not Predict Response to Androgen-Axis-targeting Agents in Metastatic Castration-resistant Prostate Cancer. Eur Urol. 2018 Jun;73(6):818-821. doi: 10.1016/j.eururo.2018.01.007.
- 3. Beltran H, Antonarakis ES, Morris MJ, Attard G. Emerging Molecular Biomarkers in Advanced Prostate Cancer: Translation to the Clinic. Am Soc Clin Oncol Educ Book. 2016;35:131-41. doi: 10.1200/EDBK_159248.



Currently not recommended

Androgen receptor aberrations PDL1 **PTEN**



Cátedra de Medicina Personalizada de Precisión







Personalised Cancer Medicine Flashcards 2022 Pancreatic Cancer





Standard

Germ-line BRCA 1-2 Microsatellite Instability*



Recommended

NTRK



Currently not recommended

ATM, PALB2, p53, KRAS, CDKN2, SMAD4, MLL3, TGFBR2, ARID1A, ALK, BRAF, HER2, ROS, RRG1



^{*} By either IHC (MLH1, PMS2, MSH2 a MSH6) or by genomic study(BAT25 and BAT26, D2S123, D5S346 and D17S250).

^{1.} Curtin NJ, Drew Y, Sharma-Saha S. Why BRCA mutations are not tumour-agnostic biomarkers for PARP inhibitor therapy. Nat Rev Clin Oncol. 2019 Dec;16(12):725-726. doi: 10.1038/s41571-019-0285-2

^{2.} de Bono J, Mateo J, Fizazi K, et al. Olaparib for Metastatic Castration-Resistant Prostate Cancer. N Engl J Med. 2020 May 28;382(22):2091-2102. doi: 10.1056/NEJMoa1911440.

^{3.} Golan T, Hammel P, Reni M, Van Cutsem E, Macarulla T, et al. Maintenance Olaparib for Germline BRCA-Mutated Metastatic Pancreatic Cancer. N Engl J Med. 2019 Jul 25;381(4):317-327. doi: 10.1056/NEJMoa1903387.



Personalised Cancer Medicine Flashcards 2022 GIST





Standard

CD 117/c-kit
CD34
Number of mitosis/50 large fields
KIT and PDGFR mutations



Recommended

DOG1*
BRAF, SDHB, NTRK**



Currently not recommended

NF1 RAS FGFR

* CD117 negative

** GIST wild type



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