

- Hirsh, V., Mok, T., Geater, S. L., Orlov, S., Tsai, C. M., Boyer, M., Su, W. C., Bennouna, J., Kato, T., Gorbunova, V., Lee, K. H., Shah, R., Massey, D., Zazulina, V., Shahidi, M., and Schuler, M. (2013) Phase III study of afatinib or cisplatin plus pemetrexed in patients with metastatic lung adenocarcinoma with EGFR mutations. *J Clin Oncol* 31, 3327-3334
8. Pao, W., and Girard, N. (2011) New driver mutations in non-small-cell lung cancer. *Lancet Oncol* 12, 175-180
 9. Soda, M., Choi, Y. L., Enomoto, M., Takada, S., Yamashita, Y., Ishikawa, S., Fujiwara, S., Watanabe, H., Kurashina, K., Hatanaka, H., Bando, M., Ohno, S., Ishikawa, Y., Aburatani, H., Niki, T., Sohara, Y., Sugiyama, Y., and Mano, H. (2007) Identification of the transforming EML4-ALK fusion gene in non-small-cell lung cancer. *Nature* 448, 561-566
 10. Kwak, E. L., Bang, Y. J., Camidge, D. R., Shaw, A. T., Solomon, B., Maki, R. G., Ou, S. H., Dezube, B. J., Janne, P. A., Costa, D. B., Varella-Garcia, M., Kim, W. H., Lynch, T. J., Fidias, P., Stubbs, H., Engelman, J. A., Sequist, L. V., Tan, W., Gandhi, L., Mino-Kenudson, M., Wei, G. C., Shreeve, S. M., Ratain, M. J., Settleman, J., Christensen, J. G., Haber, D. A., Wilner, K., Salgia, R., Shapiro, G. I., Clark, J. W., and Iafrate, A. J. (2010) Anaplastic lymphoma kinase inhibition in non-small-cell lung cancer. *N Engl J Med* 363, 1693-1703
 11. Shaw, A. T., Kim, D. W., Nakagawa, K., Seto, T., Crino, L., Ahn, M. J., De Pas, T., Besse, B., Solomon, B. J., Blackhall, F., Wu, Y. L., Thomas, M., O'Byrne, K. J., Moro-Sibilot, D., Camidge, D. R., Mok, T., Hirsh, V., Riely, G. J., Iyer, S., Tassell, V., Polli, A., Wilner, K. D., and Janne, P. A. (2013) Crizotinib versus chemotherapy in advanced ALK-positive lung cancer. *N Engl J Med* 368, 2385-2394
 12. Bergethon, K., Shaw, A. T., Ou, S. H., Katayama, R., Lovly, C. M., McDonald, N. T., Massion, P. P., Siwak-Tapp, C., Gonzalez, A., Fang, R., Mark, E. J., Batten, J. M., Chen, H., Wilner, K. D., Kwak, E. L., Clark, J. W., Carbone, D. P., Ji, H., Engelman, J. A., Mino-Kenudson, M., Pao, W., and Iafrate, A. J. (2012) ROS1 rearrangements define a unique molecular class of lung cancers. *J Clin Oncol* 30, 863-870
 13. Kohno, T., Ichikawa, H., Totoki, Y., Yasuda, K., Hiramoto, M., Nammo, T., Sakamoto, H., Tsuta, K., Furuta, K., Shimada, Y., Iwakawa, R., Ogiwara, H., Oike, T., Enari, M., Schetter, A. J., Okayama, H., Haugen, A., Skaug, V., Chiku, S., Yamanaka, I., Arai, Y., Watanabe, S., Sekine, I., Ogawa, S., Harris, C. C., Tsuda, H., Yoshida, T., Yokota, J., and Shibata, T. (2012) KIF5B-RET fusions in lung adenocarcinoma. *Nat Med* 18, 375-377
 14. Takeuchi, K., Soda, M., Togashi, Y., Suzuki, R., Sakata, S., Hatano, S., Asaka, R., Hamanaka, W., Ninomiya, H., Uehara, H., Lim Choi, Y., Satoh, Y., Okumura, S., Nakagawa, K., Mano, H., and Ishikawa, Y. (2012) RET, ROS1 and ALK fusions in lung cancer. *Nat Med* 18, 378-381
 15. Lipson, D., Capelletti, M., Yelensky, R., Otto, G., Parker, A., Jarosz, M., Curran, J. A., Balasubramanian, S., Bloom, T., Brennan, K. W., Donahue, A., Downing, S. R., Frampton, G. M., Garcia, L., Juhn, F., Mitchell, K. C., White, E., White, J., Zwirko, Z., Peretz, T., Nechushtan, H., Soussan-Gutman, L., Kim, J., Sasaki, H., Kim, H. R., Park, S. I., Ercan, D., Sheehan, C. E., Ross, J. S., Cronin, M. T., Janne, P. A., and Stephens, P. J. (2012) Identification of new ALK and RET gene fusions from colorectal and lung cancer biopsies. *Nat Med* 18, 382-384
 16. Drilon, A., Wang, L., Hasanovic, A., Suehara, Y., Lipson, D., Stephens, P., Ross, J., Miller, V., Ginsberg, M., Zakowski, M. F., Kris, M. G., Ladanyi, M., and Rizvi, N. (2013) Response to Cabozantinib in patients with RET fusion-positive lung adenocarcinomas. *Cancer Discov* 3, 630-635
 17. Takeda, M., Okamoto, I., Fujita, Y., Arao, T., Ito, H., Fukuoka, M., Nishio, K., and Nakagawa, K. (2010) De novo resistance to epidermal growth factor receptor-tyrosine kinase inhibitors in EGFR mutation-positive patients with non-small cell lung cancer. *J Thorac Oncol* 5, 399-400
 18. Li, T., Kung, H. J., Mack, P. C., and Gandara, D. R. (2013) Genotyping and genomic profiling of non-small-cell lung cancer: implications for current and future therapies. *J Clin Oncol* 31, 1039-1049
 19. Okamoto, I., Yoshioka, H., Morita, S., Ando, M., Takeda, K., Seto, T., Yamamoto, N., Saka, H., Asami, K., Hirashima, T., Kudoh, S., Satouchi, M., Ikeda, N., Iwamoto, Y., Sawa, T., Miyazaki, M., Tamura, K., Kurata, T., Fukuoka, M., and Nakagawa, K. (2010) Phase III trial comparing oral S-1 plus carboplatin with paclitaxel plus carboplatin in chemotherapy-naive patients with advanced non-small-cell lung cancer: results of a west Japan oncology group study. *J Clin Oncol* 28, 5240-5246
 20. Yoshioka, H., Okamoto, I., Morita, S., Ando, M., Takeda, K., Seto, T., Yamamoto, N., Saka, H., Atagi, S., Hirashima, T., Kudoh, S., Satouchi, M., Ikeda, N., Iwamoto, Y., Sawa, T., Nakanishi, Y., and Nakagawa, K. Efficacy and safety analysis according to histology for S-1 in combination with carboplatin as first-line chemotherapy in patients with advanced non-small-cell lung cancer: updated results of the West Japan Oncology Group LETS study. *Ann Oncol* 24, 1326-1331
 21. Tanizaki, J., Okamoto, I., Okamoto, K., Takezawa, K., Kuwata, K., Yamaguchi, H., and Nakagawa, K. (2011) MET tyrosine kinase inhibitor crizotinib (PF-02341066) shows differential antitumor effects in non-small cell lung cancer according to MET alterations. *J Thorac Oncol* 6, 1624-1631
 22. Ou, S. H., Kwak, E. L., Siwak-Tapp, C., Dy, J., Bergethon, K., Clark, J. W., Camidge, D. R., Solomon, B. J., Maki, R. G., Bang, Y. J., Kim, D. W., Christensen, J., Tan, W., Wilner, K. D., Salgia, R., and Iafrate, A. J. (2011) Activity of crizotinib (PF02341066), a dual mesenchymal-epithelial transition (MET) and anaplastic lymphoma kinase (ALK) inhibitor, in a non-small cell lung cancer patient with de

- de novo MET amplification. *J Thorac Oncol* 6, 942-946
- 23. Schwab, R., Petak, I., Kollar, M., Pinter, F., Varkondi, E., Kohanka, A., Barti-Juhasz, H., Schonleber, J., Brauswetter, D., Kopper, L., and Urban, L. (2014) Major partial response to crizotinib, a dual MET/ALK inhibitor, in a squamous cell lung (SCC) carcinoma patient with de novo c-MET amplification in the absence of ALK rearrangement. *Lung Cancer* 83, 109-111
 - 24. Sakai, K., Okamoto, I., Takezawa, K., Hirashima, T., Kaneda, H., Takeda, M., Matsumoto, K., Kimura, H., Fujita, Y., Nakagawa, K., Arao, T., and Nishio, K. (2012) A novel mass spectrometry-based assay for diagnosis of EML4-ALK-positive non-small cell lung cancer. *J Thorac Oncol* 7, 913-918
 - 25. Sequist, L. V., Heist, R. S., Shaw, A. T., Fidias, P., Rosovsky, R., Temel, J. S., Lennes, I. T., Digumarthy, S., Waltman, B. A., Bast, E., Tammireddy, S., Morrissey, L., Muzikansky, A., Goldberg, S. B., Gainor, J., Channick, C. L., Wain, J. C., Gaisser, H., Donahue, D. M., Muniappan, A., Wright, C., Willers, H., Mathisen, D. J., Choi, N. C., Baselga, J., Lynch, T. J., Ellisen, L. W., Mino-Kenudson, M., Lanuti, M., Borger, D. R., Iafrate, A. J., Engelman, J. A., and Dias-Santagata, D. (2011) Implementing multiplexed genotyping of non-small-cell lung cancers into routine clinical practice. *Ann Oncol* 22, 2616-2624
 - 26. Suda, K., Tomizawa, K., and Mitsudomi, T. (2010) Biological and clinical significance of KRAS mutations in lung cancer: an oncogenic driver that contrasts with EGFR mutation. *Cancer Metastasis Rev* 29, 49-60
 - 27. Rimkunas, V. M., Crosby, K. E., Li, D., Hu, Y., Kelly, M. E., Gu, T. L., Mack, J. S., Silver, M. R., Zhou, X., and Haack, H. (2012) Analysis of receptor tyrosine kinase ROS1-positive tumors in non-small cell lung cancer: identification of a FIG-ROS1 fusion. *Clin Cancer Res* 18, 4449-4457
 - 28. Kim, H. R., Lim, S. M., Kim, H. J., Hwang, S. K., Park, J. K., Shin, E., Bae, M. K., Ou, S. H., Wang, J., Jewell, S. S., Kang, D. R., Soo, R. A., Haack, H., Kim, J. H., Shim, H. S., and Cho, B. C. (2013) The frequency and impact of ROS1 rearrangement on clinical outcomes in never smokers with lung adenocarcinoma. *Ann Oncol* 24, 2364-2370
 - 29. Sadiq, A. A., and Salgia, R. (2013) MET as a possible target for non-small-cell lung cancer. *J Clin Oncol* 31, 1089-1096
 - 30. Wolff, A. C., Hammond, M. E., Hicks, D. G., Dowsett, M., McShane, L. M., Allison, K. H., Allred, D. C., Bartlett, J. M., Bilous, M., Fitzgibbons, P., Hanna, W., Jenkins, R. B., Mangu, P. B., Paik, S., Perez, E. A., Press, M. F., Spears, P. A., Vance, G. H., Viale, G., and Hayes, D. F. (2013) Recommendations for human epidermal growth factor receptor 2 testing in breast cancer: American Society of Clinical Oncology/College of American Pathologists clinical practice guideline update. *J Clin Oncol* 31, 3997-4013

