WPD Pharmaceuticals

APRIL 2021 | INVESTOR PRESENTATION

CSE:WBIO

Disclaimer

All statements contained herein other than statements of historical fact, including statements regarding our future results of operations and financial position, our business strategy and plans, and our objectives for future operations, are forward-looking statements. The words "believe", "may", "will", "estimate", "continue", "anticipate", "intend", "could", "expect" and similar expressions are intended to identify forward looking statements. We have based these forward-looking statements largely on our current expectations and projections about future events and trends that we believe may affect our financial condition, results of operations, business strategy, short-term and long-term business operations and objectives, and financial needs. Other statements may contain expressions of past results, studies or data owned or licensed by WPD Pharmaceuticals, Inc. (the "Company").

Such results, studies or data may not be duplicable in the future. Certain expressions of results, studies or past discoveries may also be anecdotal and non-reproducible in future studies designed specifically to test the robustness, strength or veracity of such results, studies or data. No representation herein is designed to convey any claim regarding the safety or efficacy of any compound owned or licensed by the Company. Moreover, we operate in a very competitive and rapidly changing environment. New risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the future events and trends may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements.

Company Overview

WPD Pharmaceuticals is **a diverse biotech company with 10 novel drug candidates, including 4 in clinical development stage**. Licensed drug candidates were **discovered and studied at premier USA research institutions,** such as: MD Anderson Cancer Center, Mayo Clinic, Emory University, Wake Forest Comprehensive Cancer Center **and leading Institutes, hospitals and academic centers in Poland.**

Funding

Alongside total of $100 million USD **have been applied by licensors to WPD's drug development pipeline** with focus on antiviral drugs and anticancer drugs targeting, among others, primary and metastatic brain cancers **$14 million USD in grants was recently awarded to WPD from the National Center for Research and Development in Poland (NCBiR)** for preclinical and clinical development of drugs targeting highly resistant cancers.

Position

With a groundswell of **grant support and a diverse portfolio of breakthrough drug technologies**, WPD strategically **positions itself in two ways: (1) as drug developer and (2) as development partner for non-European pharmaceuticals companies**.

Investment Highlights

Experienced Management & Advisors

Team of scientists with extensive pharmaceutical experience

Robust Drug Portfolio

10 novel drug candidates across 5 indications

Strategic Partnerships

Wake Forest University Health Sciences, Moleculin Biotech Inc. and CNS Pharmaceuticals, Inc.

Rapidly Growing Operations

4 drugs in clinical development

Tightly Held Share Structure

Management and Insiders hold ~ 36%

Attractive Valuation

Discount to industry peers

Word-Class
Pharmaceutical Team

MARIUSZ OLEJNICZAK

CEO & CO-FOUNDER

Experienced professional in clinical development - from planning and scientific advice through supervision to the closure and finalization of the project.

Founder of several start-ups and member of the board and supervisory board of R&D companies.

Co-responsible for the acquisition of Bioscience SA. (CRO operating in Poland) by the Neuca group.

MAREK SIPOWICZ

CMO

20 years of experience in clinical research in oncology (haematology and solid tumours), neuropsychiatry, diabetes and cardiovascular fields.

20 years in Director level roles at Servier, an international pharmaceutical company headquartered in France. During his time at Servier, Marek served as Director, Clinical Operations (Oncology) in France, and Director, Clinical Research in Australia.

MIKE MALANA

CFO

15 years experience as CFO, Corporate Controller and/or Corporate Secretary for a range of Canadian public companies listed on the TSX, TSXV and CSE.

BEATA PAJĄK

CSO

PhD in biotechnology with experience in the field of medical biology, including: oncology, virology.

Expert in the field of signal pathways, mechanisms of programmed cell death, chemo- and immunoresistance of cancer cells.

AGNIESZKA BUCZYŃSKA

COO

Biologist experienced in medical biology, immunology, and cardiovascular medicine. Investigator in several research projects.

Team member in several clinical trial phase I-III as in such fields as oncology, rheumatology, cardiology, urology, diabetes, psychiatry, and vascular surgery.

Author and co-author of scientific publications and conference reports.

WALTER KLEMP

BOARD MEMBER

Mr. Klemp has 29 years of experience in start-up and high-growth companies, the past nine of which have been spent developing FDA-approved dermatology therapy devices and topical compounds.

PETER NOVAK

BOARD MEMBER

Mr. Novak is 30-year veteran of the insurance and financial services industry. He is currently the General Agent of one of Mass Mutual's largest agencies with $4.8 billion in assets under management.

LIAM CORCORAN

BOARD MEMBER, CANADIAN VICE PRESIDENT OF LEGAL, CORPORATE SECRETARY

Partner of multi disciplinary legal practice with an emphasis on property insurance and related litigation.

Formerly an associate at large Vancouver based law firm.

Juris Doctor from Thompson Rivers University Law School in 2014 and holds an undergraduate degree from McGill University.

TERESA RZEPCZYK

BOARD MEMBER

15 years of experience working with junior resources companies, with particular focus on accounting and fi- nance.

Ms. Rzepczyk has experience as Controller of First Merit Group and is the former Chief Financial Officer and former Director of Cannex Capital Holdings Inc. (formerly, Arco Resources Corp.).

Ms. Rzepczyk is also fluent in Polish, which will assist the Company in its integration of WPD's business.

Scientific Advisory Board

Dr. Waldemar **Priebe**

FOUNDER

CHAIRMAN OF SCIENTIFIC ADVISORY BOARD

Dr. Waldemar Priebe, Ph.D., is a **world renowned medicinal chemist and entrepreneur.** Dr. Priebe is a **Professor of Medicinal Chemistry** in the Department of Experimental Therapeutics at MD Anderson Cancer Center, Houston, TX.

Dr. Priebe is the **inventor of more than 50 patents**, the **author of more than 200 scientific publications**, and discoverer of five drugs that have reached clinical studies in humans.

As the **founder or founding scientist of 6 pharmaceutical companies**, including three listed on Nasdaq, Dr. Priebe has been integral in advancing multiple drugs through the preclinical pipeline and clinical development.

Dr. Priebe was **one of the founding scientists of Reata Pharmaceuticals**, which has grown into a $5.5 Billion, Nasdaq listed, pharmaceutical powerhouse.

Dr. Sigmund **Hsu**

SCIENTIFIC ADVISORY BOARD MEMBER

Dr. Donald **Picker**

SCIENTIFIC ADVISORY BOARD MEMBER

Dr. Sandra L. **Silberman**

SCIENTIFIC ADVISORY BOARD MEMBER


10 Drugs
5 Indications

	Discovery	Pre-Clinical	Regulatory	Clinical I / II
Brain Cancers		**WPD101**		**Berubicin**
				WP1066
Pancreatic Cancers		**WPD1122**	**WP1066**	
		WPD1234	**WP1732**	
Other Cancers	**WPD103**			**Annamycin**
				WPD1220
Melanoma	**WPD102**			

Berubicin - Indications to Treat Glioblastoma

OVERVIEW

A new anthracycline proven to be able **to reach brain tumors by crossing the blood brain barrier** (BBB) and developed **in the treatment of glioma**.

STRATEGY

Phase I clinical studies **showed promising therapeutic effects in the GBM patients** with one complete response. These properties allow to consider BER as candidate **for pediatric therapy when long-term effects of chemotherapeutic agents are of key importance**.

CLINICAL DEVELOPMENT

- WPD Pharmaceuticals conducts research related to the development of the WPD104 molecule - berubicin, as a novel drug **in glioblastoma multiforme (GBM) therapy for children and adult patients.**
- Within the next 3 months WPD plans to start the Phase I/II clinical trials, including the FIH trial with pediatric patients.

FUNDING

- WPD has been **awarded a grant from the European Union's Regional Development Fund** ("EURDF") under the Smart Growth Operational Program 2014-2020.

LICENSE

- Sublicensed from CNS Pharmaceuticals, Inc.

WPD101 - Indications to Treat Brain Cancers, including Glioblastoma

OVERVIEW

Interluekin-13 receptor alpha 2 (IL13RA2) is a glioblastoma receptor overexpressed in >75% of GBMs and reported in >50% of GBM cases. EphA2 is cancer-specific receptor recognized by ephrin A1 cytokine. Its overexpression is also a hallmark of GBM cells, thus EphA2 receptors are proposed targets. It is assumed that > 90% of GBM overexpressed at least of the receptors.

STRATEGY

- The drug solution is based on the GBM targeted therapy against IL-13RA2 and EphA2.
- WPD101 **is a unique drug cocktail composed of two immunotoxins targeting simultaneously IL-13RA2 and EphA2 receptors**. This strategy **guarantees specific drug administration to the majority of GBM cells**.

CLINICAL DEVELOPMENT

- The drug is currently **in the advanced preclinical stage of development**. Its consistent **anticancer properties are demonstrated and validated in dogs with spontaneous GBM** closely resembling GBM in human patients. **Results indicate significant potential of WPD101**, demonstrating **the same effective treatment of GBM in humans**.

FUNDING

- WPD has been **awarded a grant from the European Union's Regional Development Fund** ("EURDF") under the Smart Growth Operational Program 2014-2020.

LICENSE

- Sublicensed from the Wake Forest University of Health Sciences (WFUHS).

WP1122 - Indications to Treat SARS-CoV-2 Infection

OVERVIEW

SARS-CoV-2 upregulates glycolysis process in infected cells to generate ATP necessary for fast virus replication, therefore **inhibition of glycolysis could be an effective antiviral strategy.** 2-deoxy-D-glucose (2-DG) is a synthetic analogue of glucose that causes depletion of ATP as well as of glucose derivatives required for protein glycosylation. Recent **results indicate that 2-DG inhibits SARS-CoV-2 replication**.

STRATEGY

WP1122 is a 2-DG derivative that **enables** achievement of high concentration of 2-DG inside cells and **effective inhibition of glycolysis**.

CLINICAL DEVELOPMENT

- Results showed that **WP1122 generates significantly higher amount of 2-DG in plasma and organs than 2-DG alone**. Animal studies with WP1122 do not indicate a potential for side effects.
- **Preliminary results confirmed antiviral WP1122 activity against SARS-CoV-2**.
- Scientific advice at **European Medicines Agency** in progress.

PARTNERS

WPD will collaborate with Moleculin on the development.

Annamycin - Indications to treat AML, metastasis to lungs

OVERVIEW

A derivative of doxorubicin, which **facilitates the rapid penetration of the drug and the effective delivery of Annamycin to cancer cells**, effectively limiting adverse effects on myocardial cells.

STRATEGY

In vitro and *in vivo* preclinical studies have shown high cytotoxicity of Annamycin against many cancer types: breast, cervix, melanoma, acute myeloid leukemia (AML).

CLINICAL DEVELOPMENT

- The drug has **been tested in 6 prior clinical trials** on 114 patients. **Low incidence of side effects**, especially cardiotoxicity, is observed with L-ANN (Annamycin liposomal formulation) administration. This **is a unique feature among anthracyclines**.
- **The drug is in the Phase I trial for AML in both Poland and the USA.** It is reported in dose escalation studies evaluating safety and activity.

LICENSE

- Sublicensed from Moleculin**.**

Other drug candidates – current status

WPD1066

In the Phase I trial at MD Anderson Cancer Center for GBM and melanoma metastasized to the brain, in the third cohort of dose escalation evaluating safety and activity. WPD plans surgical expansion to assess tumor tissue directly after administration of WP1066 at the maximum tolerated dose (MTD) for direct confirmation of target inhibition.

WPD1022

The first pSTAT3-targeted drug used in monotherapy of Cutaneous T-cell Lymphoma (CTCL). In February 2020, data form the Phase I clinical study in Poland was released. Evidence of decreased scores for most patients based on standard guidelines performed by a dermatologist and verified by dermatologist, confirmed remissions for patients in stages I-II. No major toxicities were associated with WP1220. Planned Phase II study for evaluation of larger patient population with longer treatment.

WPD102 family

Targeted therapy against IL-13RA2 by genetically modified IL-13 conjugated to a cytotoxic load ("Warhead"). In development.

WPD103 family

Radiopharmaceuticals based on the expression of tumor-specific receptors, such as IL-13RA2 and EphA2, which are not detected in normal cells, which express mainly IL-13RA1 and Eph-RA1 proteins. In development.

WPD1732

Preclinical evidence suggests injectable new molecule’s capability of inhibition of oncogenic transcription factors. In development.

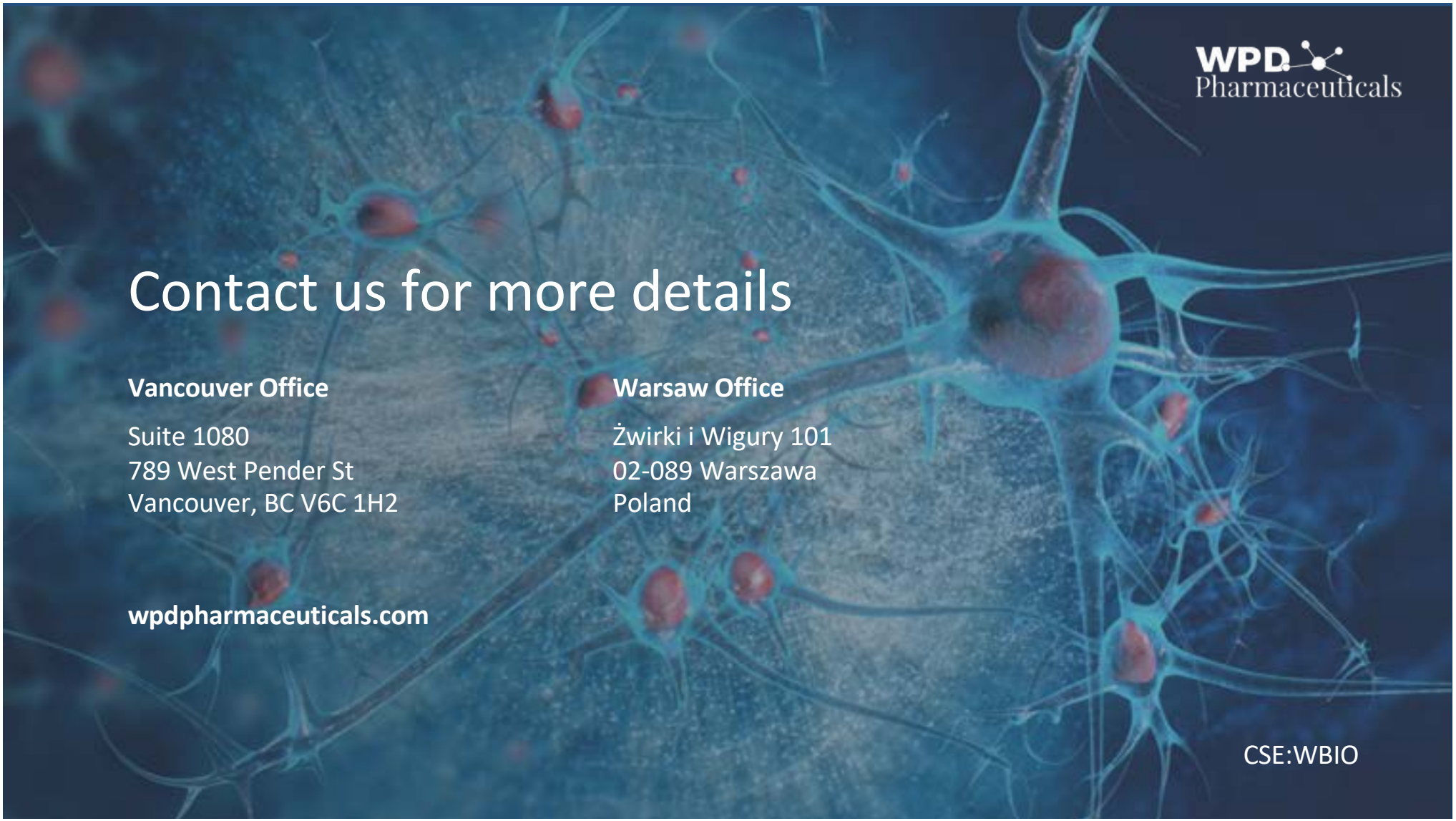
Corporate Overview

WPD Pharmaceuticals Inc.

CSE: WBIO

Capital Structure

Issued and Outstanding	**111,520,388**
Warrants	**3,949,997**
Fully Diluted	**115,470,385**
Management and Insider holdings	**36%**



Contact us for more details

Vancouver Office

Suite 1080
789 West Pender St
Vancouver, BC V6C 1H2

Warsaw Office

Żwirki i Wigury 101
02-089 Warszawa
Poland

wpdpharmaceuticals.com

CSE:WBIO

Appendix / References:

1. Bojkova D., Klann K., Koch B., Widera M., Krause D., Ciesek S., Cinatl J., Munch C. Proteomics of SARS-CoV-2-infected host cells reveals therapy genes. Nature 2020, 583:469-472.
2. Brooks TA, O'Loughlin KL., Minderman H., Bundy BN., Ford LA., Vredenburg MR., Bernacki RJ., Priebe W., Baer MR. The 4'-O-benzylated doxorubicin analog WP744 overcomes resistance mediated by P-gp multidrug resistance protein and breast cancer resistance protein in cell lines and acute myeloid leukemia cells. Invest New Drugs 2007, 25:115-22.
3. Cheng CC., Shi LH., Wang XJ., Wang SH., Wan SQ., Liu SR., Wang YF., Lu Z., Wang LH., Ding Y. Stat3/Oct-4/c-Myc signal circuit for regulating stemness-mediated doxorubicin resistance of triple-negative breast cancer cells and inhibitory effect of WP1066. Int J Oncol 2018; 53:339-348.
4. Connolly NP., Shety AC., Stokum JA., Hoeschele I., Siegel MB., Miller CR., Kim AJ., Ho CY., Davila E., Simard JC., Devine SE., Rossmeisl JH., Holland EC., Winkles JA., Woodworth GF. Cross-species transcriptional analysis reveals conserved and host-specific neoplastic proccesses in mammalian glioma. Sci Rep 2018, 1180.
5. Debinski W., Dickinson P., Rossmeisl JH., Robertson J., Gibo DM. New agents of targeting of IL-13RA2 expressed in primary human and cacine brain tumors. PloS One 2013, 16:e77719.
6. Debinski W., Tatter SB. Convention-enhanced delivery for the treatment of brain tumors.
7. Debinski W., Thompson JP. Retargeting interleukin 13 for radioimmunodetection and radioimmunotherapy of human high-grade gliomas. Clin Cancer Res 1999, 5:3143s-3147s.
8. Debinski W., Gibo DM., Obiri NI., Kealiher A., Puri RK. Novel anti-brain tumor cytotoxins specific for cancer cells. Nat Biotechnol 1998; 16:449-53.
9. Federl S., Estrov Z., Kantarjian HM., Harris D., Van Q., Fokt I., Przewloka C., Godlewski J., Woynarowski JM., Priebe W. WP744, a novel anthracycline with enhanced proapoptotic and antileukemic activity. Anticancer Res 2001, 21:3777-84.
10. Ferluga S., Lema Tome CM., Herpai Mazess D., D-Agostino R., Debinski W. Simultaneous targeting of Eph receptors in glioblastoma. Oncotarget 2016; 7:59860-59876.
11. Geng L., Li X., Zhou X., Fang X., Yuan D., Wang X. WP1066 exhibits antitumor efficacy in nasal-type natural killer/T-cell lymphoma cells through downregulation of the STAT3 signaling pathway. Oncol Rep 2016, 36:2868-2874.
12. Gruber BM. Anuszewska EL., Bubko I., Goździk A., Fokt I., Priebe W. Effect of structural modification at the 4, 3', and 2' positions of doxorubicin on topoisomerase II poisoning, apoptosis and cytotoxicity in human melanoma cells. Arch Immunol Ther Exp (Warsz) 2007, 55:193-8.
13. Gruber BM., Anuszewska EL., Bubko I., Kasprzycka-Guttman T., Misiewicz I., Skupińska K., Fokt I., Priebe W. NFkappaB activation and drug sensitivity in human neoplastic cells treated with anthracyclines. Acta Pol Pharm. 2008, 65: 267-71
14. Hussain SF., Kong LY., Jordan J., Conrad C., Madden T., Fokt I., Priebe W., Heimberger AB. A novel small molecule inhibitor of signal transducers and activators of transcription 3 reverses immune tolerance in malignant glioma patients. Cancer Res 2007, 15:9630-6.

References:

15. Inge TH., Harris NL., Wu J., Azizkhan RG., Priebe W. WP744 is a novel anthracycline with enhanced activity against neuroblastoma. J Surg Res 2004, 121:187-96.
16. Kawakami K., Kawakami M., Joshi B., Puri RK. Interleuki-13-receptor-targeted cancer therapy in an immunodeficient animal model of human head and neck cancer. Cancer Res 2001, 61:6194-200.
17. Kawakami K., Terabe M., Kawakami M., Berzofsky JA., Puri RJ. Characterization of a novel human tumor antigen interleukin-13 receptor a2 chain. Cancer Res 2006; 66:4434-4442.
18. Kioi M., Seetharam S., Puri RK. Targeting IL-13RA2-positive cancer with a novel recombinant immunotoxin composed of a single-chain antibody and mutated *Pseudomonas* exotoxin. Mol Cancer Ther 2008, 7:1579-87.
19. Kolonias D., Podona T., Savaraj N., Gate L., Cossum P., Lampidis TJ. Comparison of annamycin to Adriamycin in cardiac and MDR tumor cell systems. Anticancer Res 1999, 19:1277-83.
20. Lee HT., Xue J., Chou PC., Zhou A., Yang P., Conrad CA., Aldape KD, Priebe W., Patterson C., Sawaya R., Xie K., Huang S. Stat3 orchestrates interaction between endothelial and tumor cells and inhibition of STAT3 suppresses brain metastasis of breast cancer cells. Oncotarget 2015, 6:10016-29.
21. Lema Tome CM., Palma E., Ferluga S., Lowther WT., Hantgan R., Wykosky J., Debinski W. Structural and functional characterization of monomeric Ephrin A1 binding site to EphA2 receptor. J Biol Chem 2012, 287:14012-22.
22. Li T., Murphy S., Kiselev B., Bakshi KS., Zhang J., Eltahir A., Zhang Y., Chen Y., Zhu J., Davis RM., Madsen LA., Morris JR., Karolyi DR., LaConte SM., Sheng Z., Dorn HC. A new interlekukin-13 amino-coated gadolinium metallofullerene nanoparticle for targeted MRI detection of glioblastoma tumor cells. J Am Chem Soc 2015, 137:7881-8.
23. Nguyen V., Conyers JM., Zhu D., Gibo DM., Hantgan RR., Larson SM., Debinski W., Mintz A. A novel ligand delivery system to non-invasively visualize and therapeutically exploit the IL-13RA2 tumor-restricted biomarker. Neuro Oncol 2012; 14:1239-1253.
24. Pandya H., Gibo DM., Garg S., Kridel S., Debinski W. An interleukin 13 receptor alpha 2-specific peptide homes to human glioblastoma multiforme xenografts. Neuro Oncol 2012, 14:6-18.
25. Rossmeisl JH., Clapp K., Pancotto TE., Emch S., Robertson JL., Debinski W. Canine butterfly glioblastomas: a neuroradiological review. Front Vet Sci 2016; 3:40.
26. Sai KKS., Sattiraju A., Almageuel FG., Xuan A., Rideout S., Krishnaswamy RS., Zhang J., Herpal DM., Debinski W., Mintz A. Peptide-based PET imaging of the tumor restricted IL13RA2 biomarker. Oncotarget 2017, 24:50997-51007.
27. Sanchez EL., Lagunoff M. Viral activation of cellular metabolism. Virology 2015, 479-480:609-18.

References:

28. Sattiraju A., Solingapuram Sai KK., Xuan A., Pandya DN., Almageul FG., Wadas TJ., Herpal DM., Debisnki W., Mintz A. IL13RA2 targeted alpha particle therapy against glioblastomas. Oncotarget 2017, 27:42997-43007.
29. Sau S., Mondal SK., Kashaw SK., Iyer AK., Banerjee R. Combination of cationic dexamethasone derivative and STAT3 inhibitor (WP1066) for aggressive melanoma: a strategy for repurposing a phase I clinical trial drug. Mol Cell Biochem 2017, 436:119-136.
30. Sau S., Mondal SK., Kashaw SK., Iyer AK., Banerjee R. Combination of cationic dexamethasone derivative and STAT3 inhibitor (WP1066) for aggressive melanoma: a strategy for repurposing a phase I clinical trial drug. Mol Cell Biochem 2017, 436:119-136.
31. Sterba M., Popelova O., Vavrova A., Jirkowvsky E., Kovarikova P., Gersl V., Simunek T. Oxidative stress, redox signaling and metal chelation in anthracycline cardiotoxicity pharmacological cardioprotection. Antioxid Redox Signal 2013, 18:899-929.
32. Trevino AV., Woynarowska BA., Herman TS., Priebe W., Woynarowski JM. Enhanced topoisomerase II targeting by annamycin and related 40demetoxy anthracycline analogues. Mol Cancer Ther 2004, 3:1403-10.
33. Thaci B., Brown CE., Binello E., Werbaneth K., Sampath P., Sengupta S. Significance of interleukin 13 receptor alpha-targeted glioblastoma therapy. Neuro Oncol 2014; 16:1304-1312.
34. Thanker SK., Chang J., Christfolk HR. Viral hijacking of cellular metabolism. BMC Biology 2019, 17:59.
35. Tsujita Y., Horiguchi A., Tasaki S., Isono M., Asano T., Ito K., Asano T., Mayumi Y., Kushibiki T. STAT3 inhibition by WP1066 suppress tumor growth and invasiveness of bladder cancer cells. Oncol Rep 2017, 38:2197-2204.
36. Wang Y., Li YR., Sun MX., Ni B., Huan C., Li C., Fan HJ., Ren XF., Mao X. Triggering unfolded protein response by 2-deoxy-D-glucose inhibits porcine epidemic diarrhea virus propagation. Antiviral Res. 2014, 106:33-41.
37. Wetzler M., Thomas DA., Wang ES., Shepard R., Ford LA., Heffner TL., Parekh S., Andreeff M., O-Brien S., Kantarjian HM. Phase I/II trial of nanomolecular liposomal annamycin in adult patients with relapse/refractory acute lymphoblastic leukemia Clin Lymphoma Myeloma Leuk 2013, 13:430-4.
38. Wu J., Harris N., Inge T. Nuclear factor-kappa B and apoptosis inducing factor activation by doxorubicin analog WP744 in SH-SY5Y neuroblastoma cells. J Surg Res 2004, 122:231-9.
39. Wykosky J., Gibo DM., Debinski W. A novel, potent and specific ephrin A1-based cytotoxin against EphA2 receptor et al. Mol Cancer Ther 2007, 6:3208-18.
40. Wykosky J., Gibo DM., Stanton C., Debinski W. EphA2 as a novel molecular marker and target in glioblastoma multiforme. Mol Cancer Ther 2005, 3:541-51.

References:

41. Wykosky J., Gibo DM., Stanton C., Debinski W. Interleukin -13-receptor alpha 2, EphA2 and Fos- related antigen 1 as molecular denominators of high-grade astrocytomas and specific targets for combinatorial therapy. Clin Cancer Res 2008; 14:199-208.
42. Yu J., Yan X., Liu Y., Zhang K., Wang J., Zhang H., Liu F. Deleayed administration of WP1066, an STAT3 inhibitor, ameliorates radiation-induced lung injury in mice. Lung 2016, 194:67-74.
43. Zielinski R., Tworowska I., Skora S., Rusin A, Venugopal R, Jayakumar A., Fokt I., Kang Y., Fleming J., Huang Y. Targeting IL13RA2 in melanoma and pancreatic cancer. Cancer Res 2018, 78(13): abstract1927.
44. Zielinski R. et al. Preclinical evaluation of WP1122, a 2-DG prodrug and inhibitor of glycolysis. Proceedings: Symposia on Cancer Research 2017, Cancer Metabolism, Houston, TX, 10/2017.