Reviva Provides Corporate and Program Updates and Highlights Key Upcoming Milestones

– Schizophrenia late-stage clinical program advances with positive topline Phase 3 data, successful ongoing enrollment in open label extension (OLE) trial, and positive drug-drug interaction data supporting a differentiated profile for once-daily brilaroxazine –

– Initiation of registrational Phase 3 RECOVER-2 trial expected Q1 2024 –

– Topline data from 1-year OLE trial expected Q4 2024 –

CUPERTINO, Calif., Jan. 04, 2024 — Reviva Pharmaceuticals Holdings, Inc. (NASDAQ: RVPH) ("Reviva" or the "Company"), a late-stage pharmaceutical company developing therapies that seek to address unmet medical needs in the areas of central nervous system (CNS), inflammatory and cardiometabolic diseases, today provided program updates and announced upcoming key milestones.

"In 2023, we made significant progress across our late-stage brilaroxazine clinical program in schizophrenia, including positive topline Phase 3 data demonstrating statistically significant reductions across all major symptom domains, successful ongoing enrollment in our one-year OLE trial, and positive clinical drug-drug interaction data supporting a competitive profile for once-daily brilaroxazine," said Laxminarayan Bhat, Ph.D., Founder, President, and CEO of Reviva. "We also furthered foundational preclinical support for the therapeutic potential of brilaroxazine in other inflammatory conditions driven by underlying serotonin signaling dysfunction, including psoriasis and idiopathic pulmonary fibrosis (IPF). We believe these advances reinforce the broad potential of brilaroxazine to be a safe and effective therapy for major neuropsychiatric and inflammatory indications caused by a dysfunctional serotonin-dopamine system. Importantly, our recent progress brings us closer than ever to fulfilling our mission of reviving the full promise of patients' lives with treatment paradigm changing drugs targeting neurotransmitter-driven diseases. As we look ahead, we expect 2024 will be a pivotal year for Reviva as we continue the momentum in schizophrenia with topline data from our OLE trial expected in the fourth quarter of 2024 and initiation of a registrational Phase 3 RECOVER-2 trial expected in the first quarter of 2024. Collectively, these data are designed to support our New Drug Application (NDA) submission to the U.S. Food and Drug Administration (FDA), expected in 2025."

Pipeline Program Updates

Brilaroxazine – A once-daily, serotonin-dopamine signaling modulator

Schizophrenia Program

- Announced positive topline results and successful completion of pivotal Phase 3

RECOVER trial evaluating the efficacy, safety, and tolerability of once-daily brilaroxazine in adults with schizophrenia (October 2023)
    - Trial successfully met its primary endpoint, with brilaroxazine at the 50 mg dose achieving a statistically significant and clinically meaningful 10.1-point reduction in Positive and Negative Syndrome Scale (PANSS) total score compared to placebo (-23.9 brilaroxazine 50 mg vs. -13.8 placebo, $p<0.001$) at week 4
    - Brilaroxazine achieved statistically significant and clinically meaningful reductions in all major symptom domains and secondary endpoints (CGI, positive symptoms, negative symptoms, social cognition, and social functioning) at week 4 with the 50 mg dose vs. placebo
    - The 15 mg dose of brilaroxazine was numerically superior to placebo on the primary endpoint and most secondary endpoints and reached statistical significance on two key secondary endpoints (social cognition and social functioning).
    - Generally well-tolerated with a side effect profile comparable to placebo for the 15 and 50 mg doses of brilaroxazine; discontinuation rates for brilaroxazine lower than placebo
- Enrolled approximately 70% of patients in 1-year OLE study evaluating brilaroxazine for schizophrenia. Over 50 patients have completed 6 months of treatment and several patients have completed 1-year of treatment
- Completed a drug-drug interactions clinical pharmacology study needed for an NDA for brilaroxazine in schizophrenia
- Presented foundational preclinical data on brilaroxazine in schizophrenia at the 78th Annual Scientific Convention of the Society of Biological Psychiatry (SOBP) and publication in Medical Research Archives (May 2023)
- Presented clinical pharmacology and safety data for brilaroxazine from drug-drug interactions, radiolabeled pharmacokinetics, and mass balance studies at the American Society for Pharmacology and Experimental Therapeutics (ASPET) 2023 annual meeting (May 2023)

Psoriasis Program

- Presented on the liposomal-gel formulation of brilaroxazine and potential in psoriasis at the International Societies for Investigative Dermatology (ISID) Meeting (May 2023)
- Filed a composition of matter patent for brilaroxazine-lipogel and a separate patent for its use in the treatment of psoriasis (March 2023)

Pulmonary Program

- Announced positive preclinical data for brilaroxazine in IPF at the 2023 American Thoracic Society (ATS) International Conference and publication in Medical Research Archives (May 2023)

Corporate Update

- Strengthened financial position with a registered direct offering led by several healthcare-focused institutional investors, which raised gross proceeds of $30.0 million (November 2023)
- Joined the Russell Microcap® Index with automatic inclusion in the appropriate growth and value style indexes (June 2023)

Anticipated Milestones and Events

- Topline data from 1-year OLE trial expected Q4 2024
- Initiation of registrational Phase 3 RECOVER-2 trial expected Q1 2024
- Initiation of investigational new drug application (IND) enabling studies for liposomal-gel formulation of brilaroxazine in psoriasis expected in 2024
- May initiate Phase 2 studies in bipolar disorder, major depressive disorder, and attention deficit hyperactive disorder in 2024
- Pursue partnership opportunities for the development of our pipeline

About Brilaroxazine

Brilaroxazine is an in-house discovered new chemical entity with potent affinity and selectivity against key serotonin and dopamine receptors implicated in schizophrenia and its comorbid symptoms. Positive topline data from the global Phase 3 RECOVER trial in schizophrenia demonstrated the trial successfully met all primary and secondary endpoints with statistically significant and clinically meaningful reductions across all major symptom domains at week 4 with 50 mg of brilaroxazine vs. placebo with a generally well-tolerated side effect profile comparable to placebo and discontinuation rates lower than placebo. Positive data from a clinical drug-drug interaction (DDI) study investigating the potential effect of CYP3A4 enzyme on brilaroxazine in healthy subjects supports no clinically significant interaction when combined with a CYP3A4 inhibitor. Reviva believes that a full battery of regulatory compliant toxicology and safety pharmacology studies has been completed for brilaroxazine. Reviva intends to develop brilaroxazine for other neuropsychiatric indications including bipolar disorder, major depressive disorder (MDD) and attention-deficit/hyperactivity disorder (ADHD).

Additionally, brilaroxazine has shown promising nonclinical activity for inflammatory diseases psoriasis, pulmonary arterial hypertension (PAH) and idiopathic pulmonary fibrosis (IPF) with

mitigation of fibrosis and inflammation in translational animal models. Brilaroxazine has already received Orphan Drug Designation by the U.S. FDA for the treatment of PAH and IPF conditions.

To learn more about the clinical and preclinical data available for brilaroxazine, please visit revivapharma.com/publications.

About Reviva

Reviva is a late-stage biopharmaceutical company that discovers, develops, and seeks to commercialize next-generation therapeutics for diseases representing unmet medical needs and burdens to society, patients, and their families. Reviva's current pipeline focuses on the central nervous system, respiratory and metabolic diseases. Reviva's pipeline currently includes two drug candidates, brilaroxazine (RP5063) and RP1208. Both are new chemical entities discovered in-house. Reviva has been granted composition of matter patents for both brilaroxazine and RP1208 in the United States, Europe, and several other countries.

Forward-Looking Statements

This press release contains certain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934 and the Private Securities Litigation Reform Act, as amended, including those relating to the Company's 1-year open label extension (OLE) trial evaluating the long-term safety and tolerability for brilaroxazine in schizophrenia, the registrational Phase 3 RECOVER-2 trial, the Company's expectations regarding the anticipated clinical profile of its product candidates, including statements regarding anticipated efficacy or safety profile, and those relating to the Company's expectations, intentions or beliefs regarding matters including product development, clinical and regulatory timelines and expenses, planned or additional studies, planned or intended regulatory submissions, market opportunity, ability to raise sufficient funding, competitive position, possible or assumed future results of operations, business strategies, potential opportunities for development including partnerships, growth or expansion opportunities and other statements that are predictive in nature. These forward-looking statements are based on current expectations, estimates, forecasts and projections about the industry and markets in which we operate and management's current beliefs and assumptions.

These statements may be identified by the use of forward-looking expressions, including, but not limited to, "expect," "anticipate," "intend," "plan," "believe," "estimate," "potential, "predict," "project," "should," "would" and similar expressions and the negatives of those terms. These statements relate to future events or our financial performance and involve known and unknown risks, uncertainties, and other factors which may cause actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. Such factors include those set forth in the Company's most recent Annual Report on Form 10-K for the

fiscal year ended December 31, 2022, and the Company's other filings from time to time with the Securities and Exchange Commission. Prospective investors are cautioned not to place undue reliance on such forward-looking statements, which speak only as of the date of this press release. The Company undertakes no obligation to publicly update any forward-looking statement, whether as a result of new information, future events or otherwise.

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